

MECHANICS · AUTOS · HOME IMPROVEMENTS

POPULAR SCIENCE

February 35c

MONTHLY

Bigger than ever!

Annual Auto Issue

Including special
16-page score
card giving facts
and figures on all
1956 Cars

What's New in
Prefab Homes

PAGE 101

How to Build
Your Own
Rotary Tiller

PAGE 175



*How Hot
Is the New
Chevrolet
Corvette?*





Look what an amateur did with \$49 worth of **FORMICA®**

If you can use simple hand tools, you can resurface worn-out tops or put waste space to work with genuine Formica. You just cut Formica sheets to size with a carpenter's saw and apply it with Contact Bond Cement and a kitchen rolling pin.

From the 70 Formica colors and wood grains this hom craftsman selected Black Oak and Red Linen.



Look in your classified phone book under "plastic" for your nearest Formica dealer. Send today for free illustrated instruction folder together with actual samples of Formica. Write . . .

FORMICA

4595 Spring Grove Ave.
Cincinnati 32, Ohio

In Canada: Arnold Banfield & Co. Ltd., Oakville, Ontario

DEMAND THIS CERTIFICATION

This mark certifies genuine
REMOVE WITH SOAP AND WATER

Seeing is believing. If this wash-off identification is not on the sheet, it's not FORMICA.



*Don't guess about
your oil filter!*



Get a **FRAM "INDIVIDUALLY-ENGINEERED" CARTRIDGE**

**FULL-FLOW OR BY-PASS—EACH TYPE OF FILTRATION
DEMANDS A DIFFERENT CARTRIDGE—FRAM HAS BOTH!**

FRAM FULL-FLOW CARTRIDGE



FRAM BY-PASS CARTRIDGE



MOST NEW CARS HAVE FULL-FLOW FILTRATION

Full-flow cartridges require a flow-rate ten to fifteen times as great as by-pass cartridges. Some filter manufacturers recommend using a depth type cartridge—this is dangerous! These cartridges raise oil pressure and force relief valves open . . . feeding dirty, unfiltered oil to engine parts. On the other hand, inferior surface type cartridges have too high a flow rate for efficient filtration. Only FRAM full-flow cartridges are designed to maintain the exact flow rate for peak filter efficiency.

MANY CARS STILL HAVE BY-PASS FILTRATION

FRAM Cartridges are best for by-pass systems too. This type of system requires a depth type cartridge—not pleated paper or other surface types. Inferior cartridges cannot clean oil thoroughly. FRAM by-pass cartridges are designed to supply the proper flow of clean oil to the engine at all times.

**YOUR DEALER CAN TELL YOU WHICH SYSTEM YOU HAVE.
FULL-FLOW OR BY-PASS, FRAM CARTRIDGES ARE INDIVIDUALLY-ENGINEERED FOR YOUR CAR'S ENGINE. INSIST ON FRAM!**



**FRAM CORPORATION, Providence 16, R. I.
Fram Canada Ltd., Stratford, Ont.**

America's Leading New-Idea Magazine for 84 Years

FEBRUARY, 1956

.....

What's New in Prefab Homes.....	101
Inside the New A-Power Plants.....	106
Plush Planes Tailored for Business Brass....	108
Cable Car Runs from Sea to Mountains....	113
What's Coming Next?.....	114
Road-Building School Uses Real Machines....	116
"Black Box" Points Way to Oil and Gold....	117
Plastic Stadium Proposed for Dodgers.....	123
Wanted: Marinas for 4,000,000 Boats.....	124
3 Cars You Can't Buy.....	129
Whipping Up Air for Tomorrow's Airplanes	130

.....

AUTO NEWS	New Corvette Challenges Thunderbird and Hawk.....	136
	Good-by, Carburetors! Here Comes Fuel Injection.	140
	Facts and Figures on All U. S. 1956 Cars.....	144
	Mr. Power Steering's Ship Comes In.....	161
	

.....

Mechanized Section Gang Lays R.R. Ties.....	168
Gus and the Ninety-Day Wonder.....	172
How to Build a Rotary Tiller.....	175
Plaster Casts Make Perfect Templates.....	181
Learning to Use a Molding Head.....	183
Which Woodworking Square?.....	193
What You Can Do with a Gas Torch.....	198
How to Make a Modern Fireplace Grate.....	209
Making Traverse Rods from Wood.....	211
10 Extra Uses for Concrete Blocks.....	216
How I Installed a Pop-Up Ironer.....	218
Getting Started in Radio Building.....	227
Useful Ideas for the Modelmaker.....	232
How to Take Water Apart.....	233

(More features and departments are listed on page 4)

Editor

VOLTA TORREY

Managing Editor

HOWARD ALLAWAY

Art Editor

HOWARD C. JENSEN

Associate Editors

Alden P. Armagnac, Devon Francis, Martin Mann, Herbert O. Johansen, Sheldon M. Gallager, Henry B. Comstock, Herbert R. Pfister, Stanley Beidler, Frank Dorr, Erik H. Arctander, Ruth Westphal

Art

Harry Samuels (Director), Herbert Anthony, Gene Butera, Eric A. Karminski Jr., Henry W. Kazmirowski, Dana B. Rasmussen, Laylen H. Sweet

Copy

Kendall W. Goodwyn (Director), Everett H. Ortner, Maryann Smith, Gerorgette Sparks

Photography

W. W. Morris (Director), Hubert Luckett, Orlando Guerra

Assistant Managing Editors

Frank Rowsome Jr., Robert P. Stevenson

Mechanics and Handicraft

Harry Walton

Pacific Coast Editor

Wesley S. Griswold (Los Angeles)

Editorial Assistants

Rosa Lee Beeland (Chief), Louise Levis, Bebe Lipson, Roberta Marks

Publisher

GODFREY HAMMOND

President

RALPH H. FLYNN

Advertising Manager

LEE P. ADAMS

Circulation Director

EUGENE WATSON

ADVERTISING OFFICES:

NEW YORK—353 Fourth Ave.
CHICAGO—360 North Michigan Ave.
DETROIT—820 Book Bldg.
SAN FRANCISCO—114 Sansome St.
CLEVELAND—328 Citizens Bldg.
LOS ANGELES—1127 Wilshire Blvd.
PORTLAND, ORE.—520 S.W. Sixth Ave.
EDITORIAL OFFICES: 353 Fourth Avenue, New York 10, N. Y.

Published monthly at 353 Fourth Avenue, New York 10, N. Y., by Popular Science Publishing Co., Inc., Godfrey Hammond, Chairman of the Board; Ralph H. Flynn, President and Treasurer; Franklin E. Parker Jr., Secretary; Eugene Watson, Vice-President. Second-class mail privileges authorized at New York, N. Y. and Dayton, Ohio. Entered as second-class matter at the Post Office Department, Canada. Printed in U.S.A. Copyright, 1956, by Popular Science Publishing Co., Inc. All rights reserved in the United States, Great Britain, and in all the countries participating in the International Copyright Convention and Pan-American Copyright Convention. Single copy 35c. Subscriptions to United States, its possessions, and Canada, 1 year \$3.40 (2 years \$6.00, 3 years \$8.00). Elsewhere, 1 year \$6.00 (2 years \$11.00, 3 years \$16.00). Four weeks' notice is needed to change a subscriber's address. Please give both old and new addresses, including postal zone numbers.

PICK YOUR OWN SUCCESS STORY FROM THIS PAGE

These are the true stories of people who seemed trapped in routine, low-pay shaky jobs. Handicapped by lack of proper training, they couldn't get the things they wanted out of life—more money, a job they liked, security and happiness.

They are a small sample of the thousands of men and women—young and old—who turn to I. C. S. for help. Their will-to-learn plus I. C. S. training have changed the course of their lives.

Are you discouraged with your job and pay and feel you can't improve yourself because of lack of specialized education? Well, these men and women were in the same boat. With I. C. S. training, one of these success stories could be about you.

I. C. S. is the oldest and largest correspondence school, 277 courses. Business, industrial, engineering, academic, high school. One for you. Direct, job-related. Bedrock facts and theory plus practical application. Complete lesson and answer service. No skimping. Diploma to graduates.

For Real Job Security—Get an I. C. S. Diploma!

I. C. S., Scranton 9, Penna.

Member, National Home Study Council



Wins \$3000 contest—"After my I. C. S. course I secured a new position," says Mr. Cecil Rhodes. "My income has more than doubled and I recently won a \$3000 sales contest."



From clerk to Assistant Estimator, thanks to I.C.S. "Any way you look at it," writes Mrs. Edna James, "the time and money one spends for I. C. S. Courses will be repaid a thousandfold."



"As a college graduate, I found I. C. S. very valuable." Robert Lee took the I. C. S. Course in Advertising, is now Promotion Manager for a large corporation. "I. C. S. got me started on the way up," he says.



From \$152 to \$395 a month—"I.C.S. made my engineering work more interesting," Frank Bachtik tells us. "I was a Mr. Draftsman making \$152 a month. My present income is \$395.25 a month."

3 FREE BOOKS—a 36-page pocket-size guide to advancement, a gold mine of tips on "How to Succeed." Also a big catalog outlining opportunities in your field of interest and a sample I.C.S. lesson (Math.).

INTERNATIONAL CORRESPONDENCE SCHOOLS

BOX 92641P, SCRANTON 9, PENNA.

(Partial list of 277 courses)

Without cost or obligation, send me "HOW TO SUCCEED" and the opportunity booklet about the field before which have marked X (plus sample lesson):

- ☐ **ARCHITECTURE and BUILDING CONSTRUCTION**
 - ☐ Air Conditioning—Refrig.
 - ☐ Architecture
 - ☐ Architectural Interior
 - ☐ Building Contractor
 - ☐ Building Maintenance
 - ☐ Carpenter and Mill Work
 - ☐ Estimating
 - ☐ Heating
 - ☐ Painting Contractor
 - ☐ Plumbing
 - ☐ Reading Arch. Blueprints
- ☐ **ART**
 - ☐ Cartooning
 - ☐ Commercial Art
 - ☐ Fashion Illustrating
 - ☐ Magazine Illustrating
 - ☐ Show Card and Sign Lettering
 - ☐ Sketching and Painting
- ☐ **AUTOMOTIVE**
 - ☐ Auto Body Rebuilding
 - ☐ Auto Elec. Technician
 - ☐ Auto-Engine Tune Up
 - ☐ Automobile
- ☐ **AVIATION**
 - ☐ Aeronautical Engineering Jr.
 - ☐ Aircraft & Engine Mechanic
- ☐ **BUSINESS**
 - ☐ Advertising
 - ☐ Bookkeeping and Accounting
 - ☐ Business Administration
 - ☐ Business Correspondence
 - ☐ Public Accounting
 - ☐ Creative Salesmanship
 - ☐ Federal Tax
 - ☐ Letter-writing Improvement
 - ☐ Office Management
 - ☐ Professional Secretary
 - ☐ Retail Business Management
 - ☐ Sales Management
 - ☐ Stenographic-Secretarial
 - ☐ Traffic Management
- ☐ **CHEMISTRY**
 - ☐ Analytical Chemistry
 - ☐ Chemical Engineering
 - ☐ Chem. Lab. Technician
 - ☐ General Chemistry
 - ☐ Natural Gas Prod. & Trans.
 - ☐ Petroleum Engineering
 - ☐ Plastics
 - ☐ Pulp and Paper Making
- ☐ **CIVIL, STRUCTURAL ENGINEERING**
 - ☐ Civil Engineering
 - ☐ Construction Engineering
 - ☐ Highway Engineering
 - ☐ Reading Struct. Blueprints
 - ☐ Sanitary Engineering
 - ☐ Structural Engineering
 - ☐ Surveying and Mapping
- ☐ **DRAFTING**
 - ☐ Aircraft Drafting
 - ☐ Architectural Drafting
 - ☐ Electrical Drafting
 - ☐ Mechanical Drafting
 - ☐ Mine Surveying and Mapping
 - ☐ Plumbing Drawing and Estimating
 - ☐ Structural Drafting
- ☐ **ELECTRICAL**
 - ☐ Electrical Engineering
 - ☐ Electrical Maintenance
 - ☐ Electrician ☐ Contracting
 - ☐ Lineman
- ☐ **HIGH SCHOOL**
 - ☐ Commercial ☐ Good English
 - ☐ High School Subjects
 - ☐ Mathematics
- ☐ **LEADERSHIP**
 - ☐ Foremanship
 - ☐ Industrial Supervision
 - ☐ Leadership and Organization
 - ☐ Personnel-Labor Relations
- ☐ **MECHANICAL AND SHOP**
 - ☐ Gas-Electric Welding
 - ☐ Heat Treatment ☐ Metallurgy
 - ☐ Industrial Engineering
 - ☐ Industrial Instrumentation
 - ☐ Industrial Supervision
 - ☐ Internal Combustion Engines
 - ☐ Machine Design-Drafting
 - ☐ Machine Shop Inspection
 - ☐ Machine Shop Practice
 - ☐ Mechanical Engineering
 - ☐ Quality Control
 - ☐ Reading Shop Blueprints
 - ☐ Refrigeration
 - ☐ Sheet Metal Worker
 - ☐ Tool Design
 - ☐ Toolmaking
- ☐ **RADIO, TELEVISION**
 - ☐ Industrial Electronics
 - ☐ Practical Radio TV Eng'g
 - ☐ Radio and TV Servicing
 - ☐ Radio Operating
- ☐ **TELEVISION**
 - ☐ Television Technician
- ☐ **RAILROAD**
 - ☐ Air Brakes
 - ☐ Car Inspector
 - ☐ Diesel Locomotive
 - ☐ Locomotive Engineer
 - ☐ Section Foreman
- ☐ **STEAM AND DIESEL POWER**
 - ☐ Combustion Engineering
 - ☐ Diesel-Elec.
 - ☐ Diesel Eng's
 - ☐ Electric Light and Power
 - ☐ Stationary Fireman
 - ☐ Stationary Steam Engineering
- ☐ **TEXTILE**
 - ☐ Carding and Spinning
 - ☐ Cotton, Rayon, Woolen Mfg.
 - ☐ Finishing and Dyeing
 - ☐ From Flax ☐ Textile Dyeing
 - ☐ Textile Eng'g ☐ Throwing
 - ☐ Warping and Weaving
- ☐ **MISCELLANEOUS**
 - ☐ Domestic Refrigeration
 - ☐ Marine Engineering
 - ☐ Ocean Navigation
 - ☐ Professional Engineering
 - ☐ Short Story Writing
 - ☐ Telephony

Name _____ Age _____ Home Address _____

City _____ Zone _____ State _____ Working Hours _____ A.M. to P.M.

Occupation _____ Canadian residents send coupon to International Correspondence Schools, Canadian, Ltd., Montreal, Canada. . . . Special tuition rates to members of the U. S. Armed Forces.

You Put a New Twist in Your Work—



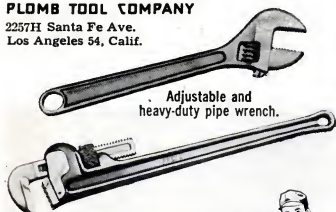
PROTO ADJUSTABLE WRENCHES have thin, extra strong jaws for narrow spaces, yet deep enough to seat both hex and square nuts. Sturdy I-beam handles give great strength with less weight.

PROTO PIPE WRENCHES are engineered for light weight and good balance. They have deep, sharp teeth to give you a better "bite". A wide selection in both Normal and Heavy-duty types will handle all of your jobs.

Buy them from your dealer today! Send 10¢ for catalog of entire line to

PLOMB TOOL COMPANY

2257H Santa Fe Ave.
Los Angeles 54, Calif.



Eastern Factory, Jamestown, N.Y. • Canadian Factory, London, Ont.

News and Pictures

Baby Atom Smasher to Look for Oil.....	105
Heat Air-Conditions Atomic Plant.....	105
British Scooters Designed for Gals.....	107
Six Jets on Chevy Give It High Speed.....	110
Air Pressure Lights Floodlamp.....	110
Arizona Chapel Dedicated to All Faiths.....	111
Shining Tower Will Never Need Paint.....	111
Copter Drops Painter to "Pumpkin".....	112
Pilot Wears His Movie Camera.....	112
Lensless Goggles Keep Out Wind.....	122
NYU Builds a Reactor in a Barrel.....	122
Jeep Has Sliding Doors.....	123
Amateur Builds Own Back-Yard Palomar.....	128
"Tunnel" Checks Weapons at 100 Knots.....	134
Solid Fuel Can Be Handled Like Liquid.....	134
Gadget Gets You Out of Tight Squeeze.....	135
Stacker Picks Up Logs by Truckload.....	135

Mechanics and Homebuilding

Fast Spatter-and-Wipe Technique.....	180
On-Off Trailer Hitch Clamps in Place.....	188
Wooden Holder Guards Welding Tips.....	192
4 Steps in Renewing a Book Cover.....	197
Stepladder Helps Drill Long Piece.....	202
Rolling Car Mixes the Paint.....	205
Garden Rake Does Snow-Duty.....	208
Tip on Treating a Typewriter.....	208
Modern Table Made of Wood and Iron.....	210
Towel Quiets Electric Shaver.....	215
Molding Finishes Plywood Edge.....	215
Oil Drum Made into a Canine Quonset.....	221
Items to Build for the Home "Office".....	222
Gun Muzzles Kept Dust-Free.....	224
Four Photo Tips.....	231
Spread Glue with Ice-Cream Sticks.....	236
Pins Locate Break in Heavy-Duty Cord.....	236
Level is Combined with Straightedge.....	237
Triangular Sawhorse Sets Up Anywhere.....	238
Support Holds Logs for Speedy Sawing.....	242
Salvaged Stroller Makes Welding Cart.....	244
Doorstop Protects Work Face.....	248

Departments

Letters	18
I'd Like to See Them Make.....	92
PSM Late News.....	94
Craftsmen at Work.....	96
New in Aviation.....	120
New Ideas from the Inventors.....	165
New Aids to Living.....	170
New Tools.....	182
Hints from the Model Garage.....	189
New for Your Car.....	191
New Shop Ideas.....	203
Do It the Easy Way.....	205
Wordless Workshop.....	206
New for the Handy Man.....	219
Keeping the Home Shipshape.....	225

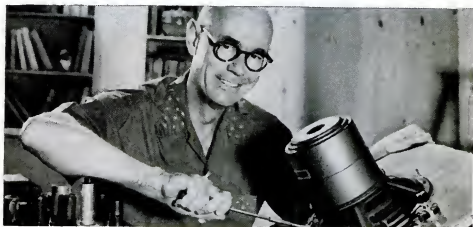
How a man of 35 can retire at 55 with \$300 a month

"Never knew I was a born craftsman until I retired. But, believe me, nothing has ever given me more satisfaction than the first shelves I built with my own two hands. Today I'm working on our hi-fi set. You see, I'm still young—only 55. I retired to keep busy, but strictly at the things I always wanted to do. I've been turning out some really beautiful furniture in my basement workshop. But if it weren't for that \$300 check each month, I'd still be at the plant worrying about production figures instead of producing on my own.

"Indirectly, I have my father to thank for that income. Twenty years ago we were right in the middle of the depression. My father had always told us he hoped to retire at 65. But when the time came, his savings weren't large enough to rely on, so he was forced to keep on working. I was 35 then. My job promised a good financial future, so I went from day to day without thinking ahead.

"Then one day my father pointed out that he had had the same kind of promising job when he was my age. He and my mother had lived comfortably, sent us children through college, but somehow he had never been able to save enough to retire.

"I began to think seriously. With



a wife, two children and a third on the way, I hadn't saved much. As the children would grow older, expenses would increase. Even if I were able to save, I might outlive my savings.

"I started reading everything I could on ways to retire. One day I saw an ad for a plan that seemed made for me. It was called the Phoenix Mutual Retirement Income Plan. If I started at a young enough age, this plan could provide a life income from \$10 to \$300 a month.

"I clipped the coupon and sent for the booklet. It explained all about Phoenix Mutual Plans. I discovered I'd actually be able to retire at 55 instead of later as my father had suggested. That fact alone was enough to make me decide on Phoenix Mu-

tual, but I carefully compared it with all other plans. It was still Phoenix Mutual for me.

"Shortly afterward I applied and qualified for a Phoenix Mutual Plan. That was only twenty years ago. When my first check for \$300 came, I retired. I've a new career in my workshop—my ambition for years."

Send for Free Booklet

This story is typical. Assuming you start at a young enough age, you can plan to have an income of \$10 a month to \$3,000 a year or more—beginning at age 55, 60, 65 or older. Send the coupon and receive, by mail and without charge, a booklet which tells about Phoenix Mutual Plans. Similar plans are available for women—and for employee pension programs.

Don't put it off. Send for your copy now.



ESTABLISHED 1861

PHOENIX MUTUAL

Retirement Income Plan

GUARANTEES YOUR FUTURE

OVER 100 YEARS OF LIFE INSURANCE PROTECTION
FOR BUSINESS AND FAMILIES

PLAN FOR WOMEN

PHOENIX MUTUAL
LIFE INSURANCE CO.
168 Elm Street, Hartford 15, Conn.

Please mail me, without cost or obligation,
your illustrated booklet "Retirement Income
Plans for Women."

Name

Date of Birth

Business Address

Home Address

PLAN FOR MEN

PHOENIX MUTUAL
LIFE INSURANCE CO.
168 Elm Street, Hartford 15, Conn.

Please mail me, without cost or obligation,
your illustrated booklet showing how to get a
guaranteed income for life.

Name

Date of Birth

Business Address

Home Address



Experimental model of Bell's new high-frequency transistor. It has a cut-off frequency of at least 500 mc and can be used to amplify 2500 independent voices simultaneously.

THE TRANSISTOR

that smashed a frequency barrier

A new transistor invented at Bell Telephone Laboratories can provide broadband, high-frequency amplification never before possible with transistors. The big leap in frequency is made possible by a diffusion process that earlier enabled Laboratories scientists to create the Bell Solar Battery.

This transistor is a three-layer semiconductor "sandwich." High-frequency operation is obtained by making the central layer exceedingly thin. This had previously been

difficult to do economically.

The new diffusion process, however, easily produces microscopic layers of controllable thickness. Thus it opens the way to the broad application of high-frequency transistors for use in telephony, FM, TV, guided missiles, electronic brains and computers.

The new transistor shows once again how Bell Laboratories creates significant advances and then develops them into ever more useful tools for telephony and the nation.



Scientist checks temperature as arsenic vapor diffuses into germanium, creating $4/100,000$ -in. layer.

BELL TELEPHONE LABORATORIES

Improving America's telephone service provides careers for creative men in scientific and technical fields





How these 18 Experts can help you

Get into a High Pay

ACCOUNTING CAREER

LaSalle's famous staff of Accounting authorities are helping thousands prepare for fast promotions and bigger pay. They can do the same for you!

If your heart is set on a larger income and all that it means . . . better home—fine car—larger bank account—more of the good things of life. . .

If that's your ambition and you are really serious about it, then you owe it to yourself to get the REAL FACTS about Accountancy, and the many good-pay opportunities that can be YOURS through LaSalle's famous Problem Method plan.

It matters not whether you've had a single day of experience in this field—or whether you have already started but want to climb higher. LaSalle's expert training is designed to take you from where you are . . . to where you want to be . . . in higher positions and a lifetime career of security and good income.

WHY YOU CAN'T FAIL TO GAIN

You see on this page a panel of experts who know Accounting from A to Z . . . all the way from Basic Accounting, on up through Accounting Systems, Cost Accounting, Auditing, Income Tax, and training for the C.P.A. certificate. These are only part of our instruction staff. But what is most important to you . . .

...These C.P.A.'s and Expert Accountants know how to impart their knowledge to others . . . how to help you prepare quickly yet thoroughly for success in this lucrative field.

The proof? What stronger proof could there

be than that more than 4,200 Certified Public Accountants (one out of every 13 of the U.S. total) has trained with LaSalle? Or the hundreds of thousands of men and women whom LaSalle has helped qualify rapidly for more money, a brighter future, in a high-pay-lifetime career? These thousands came to us with different backgrounds of experience and varying degrees of ambition. Many have reported raises and promotions after only a few weeks of training. Thousands of them have written to say they are now earning 50% more—even double their former incomes—often in less than a year. These letters are published in book form for your inspection. They were written by real people, with real income, problems and ambitions—people who might be your next-door neighbor.

Yes, if you are really sincere in wanting to better your position—start your income climbing—enjoy a lifetime career of high standing and high reward—this friendly staff of experts can help you.


SAMPLE LESSON SENT FREE MAIL COUPON BELOW

You don't have to wonder what LaSalle's Accountancy plan is like. You will be sent a free sample lesson, which does not obligate you in any way. Study it—keep it—see for yourself how simple, clear, and easy it is to master. This is an actual lesson right out of the regular training—to show you exactly how LaSalle's Problem Method has trained more than 1,350,000 men and women from all walks of life.

Also . . . the 48-page book, "Accountancy, the Profession That Pays," gives all the latest facts about the new and growing opportunities in several different fields of profitable employment.

This can be an important day in your life. A coupon like the one below has started hundreds of thousands of men and women toward a bigger job, a larger income. It can do the same for you.

Member, National Home Study Council



FREE 48-PAGE CATALOG

Mail the Coupon Today!

LA SALLE

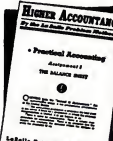
EXTENSION UNIVERSITY

A Correspondence Institution

417 S. Dearborn St., Dept. 283H, Chicago 5, Ill.

Send free Sample Lesson in Accounting—also, 48-page free book, "Accountancy, the Profession That Pays" . . . all without cost or obligation.

FREE SAMPLE LESSON



Name _____ Age _____

Address _____

City & Zone _____ State _____

IMPORTER'S SACRIFICE SALE!

World Famous KORJUM Hunting Knives

from Solingen, Germany

REG. 3.95—NOW ½ PRICE

1.98

Take Your Pick— all one low price!

These unique hand forged hunting knives are made by world-renowned craftsmen of SOLINGEN, GERMANY. Sharp, rugged blades are genuine KORJUM steel. The handsome, unusual designs have won recognition in sports circles thruout Europe. American hunters and fishermen, too, have been quick in expressing their enthusiastic approval. Over 100,000 already sold here! Now you, too, can get your favorite design—direct from the importer at a rock-bottom price! The blades are actually sharp enough to shave with; will stand up against most rugged treatment. Genuine leather scabbard tailored for each knife—metal tipped for sharp pointed models. Lengths 9 to 10 inches. The tough, sturdy KORJUM steel made in Germany assures you years of dependable service. Their sleek graceful lines also provide ideal rec room or den decorations. Dandy gifts for men—and a sportsman's delight! Import supply limited. The low \$1.98 price for both knife and scabbard means you'll have to act fast! Send \$1.98 for prompt prepaid delivery, or order COD plus postage. Your money back if not delighted. Check desired model in coupon below.

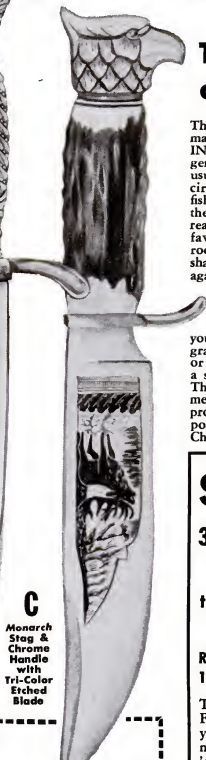


A
Rhine
Maiden
Golden
Hued
Handle



B
Black
Forest
Hunting
Knife

NEW DELUXE
MODEL



C
Monarch
Stag &
Chrome
Handle
with
Tri-Color
Etched
Blade

MAIL TODAY!

THORESEN'S, Dept. 7-B-8001
352 Fourth Avenue,
New York 10, N. Y.

RUSH Korjum Knife checked below at 1.98 ea. on
5-day home trial. Include deluxe leather sheath. If
not satisfied, I'll return knife for quick refund.

CHECK MODEL DESIRED:

☐ A (Rhine Maiden) ☐ B (Black Forest) ☐ C (Monarch)

☐ No. 75—3-Color Flashlight (99c)

Name _____

Address _____

Town _____ Zone _____ State _____

SPECIAL!

3 COLOR POLICE FLASHLIGHT

throws red, white &
green beam!

REG. NOW ½
1.98 PRICE **99c**



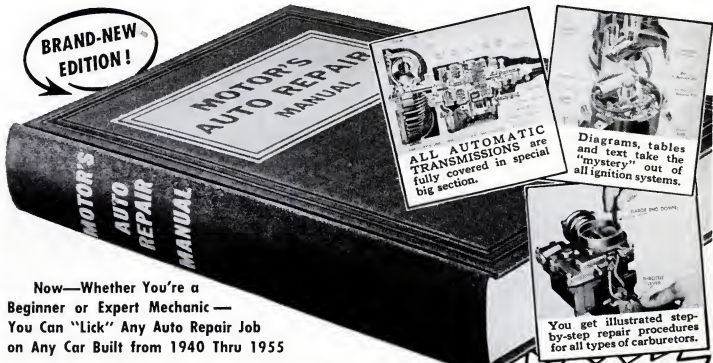
The famous 3-Color Police Flashlight can now be yours! Police & fire departments have been ordering 'em by the carload—N.Y. City policemen alone have ordered thousands! Push-buttons give you red, green or white beam instantly. Hi-Glo reflector increases beam intensity—visible miles away! Great for highway emergencies. Now—only 99c. Check No. 75 in coupon.

Here's the **EASY, Step-by-Step** Way to

FIX ANY CAR IN A JIFFY!

Engines, Brakes, Transmissions, Rear Ends, Carburetors—Yes, Any Part

**BRAND-NEW
EDITION!**



Now—Whether You're a
Beginner or Expert Mechanic —
You Can "Lick" Any Auto Repair Job
on Any Car Built from 1940 Thru 1955

YES, now you can fix ANY part of ANY car—quickly, easily, and right! From carburetor adjustment to a complete overhaul, it's easy when you have MOTOR's famous Auto Repair Manual. It's like having a staff of factory experts and MOTOR's field-trained engineers beside you, guiding you every step of the way. No wonder so many thousands of beginner and expert mechanics alike use this step-by-step, illustrated giant manual.

MOTOR's Manual "starts from scratch"—leads you through entire job with easy step-by-step directions, clear "how-to" pictures. Tells you WHERE to start, what TOOLS to use. You just CAN'T go wrong!

**2,900 Pictures! So Complete
So Simple, You CAN'T Go Wrong!**

NEW, REVISED edition covers everything you need to know to repair any car. Over ONE THOUSAND giant pages, 2900 "This-Is-How" pictures lead you every step of the way. 291 "Quick-Check" charts—23,436 essential repair specifications. Over 225,000 service and repair facts on ALL 737 chassis models from 1940 thru 1955. Instructions and pictures so clear you can't go wrong! Even a green beginner mechanic can do a good job. And

you're a top-notch mechanic, you'll be amazed by the time and labor-saving methods!

**The "Meat" of Over 160
Official Shop Manuals**

**OVER
2 MILLION
COPIES
SOLD!**

The editors have put together the "know-how" from over 160 Official Shop Manuals and "boiled it down" into one fully-illustrated easy-to-understand guide.

Here's ILLUSTRATED step-by-step guidance on Automatic Transmissions, Tune Up, Ignition, Carburetors, Fuel Pumps, Clutches, Steering Gears, Rear End, Brakes, PLUS MUCH MORE.

SEND NO MONEY

Try Book for a Week FREE

Send no money. Pay nothing to postman.

Test book in your own garage or shop. It's GUARANTEED to pay for itself in 7 days. If it doesn't, just return the book, and owe nothing. **MOTOR Book Dept., Desk 2B, 250 West 55th St., New York 19, N.Y.**

USED BY U. S. ARMED FORCES

Covers 737 Models—All These Makes

Buick
Cadillac
Chevrolet
Chrysler
Crosley
De Soto
Dodge

Ford
Frazer
Henry J
Hudson
Kaiser
Lincoln
Mercury

Nash
Oldsmobile
Packard
Plymouth
Pontiac
Studebaker
Willys

**Same FREE Offer on
MOTOR'S New
TRUCK MANUAL**

Covers EVERY job on EVERY popular make gasoline truck as well as GM and Cummins Diesels 1946 thru 1955. For FREE trial, check coupon.

Try Book
for a Week

FREE

**Beginner Raves About
Book . . .**

"Never knew anything about repairing cars until I got this wonderful book. Easy to see close-up pictures of every part. Has paid for itself time and time again."



—F. Pamper, Wisc.



So Does Expert
"Have been a mechanic for 25 years. MOTOR'S Manual still takes me out of the tight spots. And it's simple enough to be understood by average person."

—V. Lauria, Nev.

MAIL COUPON NOW FOR 7-DAY FREE TRIAL

MOTOR BOOK DEPT.

Desk 2B, 250 W. 55th St., N. Y. 19, N. Y.

Rush to me at once (check box opposite book you want):

☐ MOTOR'S New **AUTO REPAIR MANUAL**. If O.K., I will remit \$2 in 7 days, \$2 monthly for 2 months and a final payment of \$6 (plus \$35 delivery charges) one month after that. Otherwise I will return the book postpaid in 7 days. (Foreign price, remit \$9 cash with order.)

☐ MOTOR'S New **TRUCK REPAIR MANUAL**. If O.K., I will remit \$2 in 7 days, and \$2 monthly for 2 months, plus \$35 delivery charges with final payment. Otherwise I will return book postpaid in 7 days. (Foreign price, remit \$10 cash with order.)

Print Name Age

Address

City State

☐ Check box and save \$35 shipping charge by enclosing WITH coupon entire payment of \$6.35 for Auto Repair Manual for \$8 for Truck Repair Manual.) Same 7-day return-refund privilege applies.

We'll train & establish you in Your Own Business ... even if now employed

We are enlarging this 26-year-old world-wide chain of Duraclean dealerships. Many excellent locations are still available in the U.S.A., Canada, and other countries. If you are reliable and diligent, this is an opportunity to increase your income . . . and have the freedom, financial independence, and prestige of YOUR OWN business.

These are full time dealerships . . . but you can start

in spare time and have a profitable, lifetime business when your present job ends. A Duraclean dealer will train and assist you. He'll reveal his successful, proven methods and sales plans. He'll work with you.

Alert dealers can average \$5 hourly gross profit on service they render plus \$3 on EACH service-man on National Price Guide charges. This business is easy to learn . . . quickly established.

World-wide Service

FREE
Booklet
tells how!



You Become an Expert in cleaning and protecting Rugs and Upholstery

DURACLEAN cleans by absorption. It eliminates scrubbing . . . soaking . . . shrinkage. Aerated foam, created by electric Foamator, restores natural lubrication in rugs and upholstery. Dirt, grease and many unsightly spots vanish. Fabrics and floor coverings are cleaned with a new consideration for their life and beauty.

This modern process avoids strong soaps and machine scrubbing, eliminating unnecessary wear and breaking of fibers. Fabric life is increased.

DURACLEANING is done in the home. Customers like this convenience. Fabrics dry in a few hours. Rug pile again stands erect and even. Brilliant colors revive. Furnishings become clean, fresh and enlivened.

DURAPROOF® is another year "round service rendered in the home, office or institution — without removing furnishings. It protects upholstery, rugs, furs, clothing and auto interiors against damage by moths and carpet beetles.

U.S. Government says "Moths are present in practically every household . . . No section of country seems free from such infestations."

DURAPROOF kills moths and carpet beetles . . . it makes materials non-eatable to both.

DURAPROOF is backed by an International 6-Year Warranty.



Easy to Learn • No Overhead Expense

Permanent, Growing Market

Service is rendered in homes, offices, hotels, theaters, institutions and to revive used-car upholstery for auto dealers. There is need for these services in almost every building. Duraclean dealers operate from their home, an office or shop, as they prefer. It's easy to learn . . . we quickly train you. Rendering service yourself, at first, prepares you to train and supervise service men.

Repeat and Voluntary Orders

Demonstrations win new customers.

DURACLEAN Dealers find **REPEAT** and **VOLUNTARY** orders a major source of income. Customers, enthused with results, tell friends and neighbors. Furniture and department stores and others turn over rug and upholstery cleaning and moth-proofing to **DURACLEAN** Dealers. We show you 27 ways to get new customers.

We Help You Grow

Our **MUTUAL COOPERATION** program gives you many unique and continuous advantages: **National Advertising** in Life, McCall's, House & Garden, Maclean's (Canada) and a dozen others. **Copyright** and **trademark** protection. **Certificate** approves equipment and materials. **Products Insurance**. **Six-year Warranty**. **Pocket Demonstrators**. **Sales Book**. **Advertising Folders & Cards**. **Tested Ads**. **Ad Cuts & Mats**. **Store Display Cards**. **Radio & TV Musical Commercials**. **Home Show Booth Display**. **Publicity**. **Program gets FREE** local newspaper stories. **Prizes**. **Laboratory research** and development. **Duragram** bulletins. **Resale Service**. **Annual Conventions**. Behind all this is a 26-year-old headquarters interested in YOUR personal success. If you want to become the owner of a **DURACLEAN** Service business, you should inquire now. **TODAY**, while territory is still available.

What Dealers Say

W. Lookiebill: "We've had 20 years of pleasant dealings. I'm 65 but am setting my sights for 20 more years."

P. D. Freidinger: "70% of our business is repeat."

E. Davis: "Our sales increased \$17,660.00 this year over last."

L. B. Hayes: "It was my lucky day when I received my dealership. During my first month, I grossed \$770.17. Duraclean has proved so popular. I am now a full time dealer."

W. Abbott: "In the past 7 months I have taken in over \$12,000, almost entirely on cleaning the interiors of auto-objects."

Ardis Wilson: "This month, working alone, I grossed \$1,200.10."

R. Kimbrough: "Finished First White House of Confederacy and am to Duraclean the Governor's Mansion."

T. Komari: "We have 1,000,000 yen contract Duracleaning for U. S. Army in Japan."

L. Johnson: Each customer leads to 3 or 4 more."

EASY TERMS

A moderate payment establishes your own business—pay balance from sales. We furnish electric machines, folders, store cards, introduction slips, sales book, demonstrators and enough material to return your **TOTAL** investment.

FREE Booklet

Our first letter and illustrated booklet will explain everything — the two modern, urgently needed services, waiting market, how business grows, your large profit, easy terms and **PROTECTED** territory. Clip and mail coupon today! **Get all the facts . . . no obligation.**

Duraclean Co. 6-182 Duraclean Bldg. DEERFIELD, ILLINOIS

"OWN a Business" Coupon

DURACLEAN CO., 6-182 Duraclean Bldg., Deerfield, Illinois

Without obligation to me, send booklet and letter giving full details. Tell me how I may OWN a growing business of my own built upon satisfied customers.

Name

Address

City State



J. E. SMITH
President, National Radio Institute. 40 years' experience training men at home for Radio-TV.

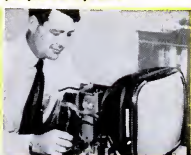
I Will Send You A SAMPLE LESSON FREE to show you how easy, practical it is to Train at Home for Good Radio-Television Jobs



America's Fast Growing Industry Offers You Good Pay Plus a Bright Future

TRAINING plus OPPORTUNITY is the PERFECT combination for ambitious men. Let me send you a sample lesson from my course to prove you can keep your job while TRAINING at home in your spare time for better pay and a brighter future. I will also send my 64-page book to show you that Radio-Television is today's field of OPPORTUNITY for properly trained men.

Make \$10, \$15 a Week Extra
Many men I train fix neighbors' Radios, make extra money, soon after they enroll. Actual equipment you build gives you practical experience.

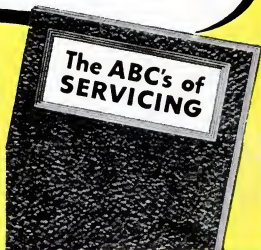


Television's Growth is Making More Jobs, Prosperity

Radio is bigger than ever and television is growing fast. Government, Aviation, Police, Ship, Microwave Relay, Two Way Communications for buses, taxis, railroads are other growing fields for Radio-Television trained men.

Mail Coupon—Find Out About This Tested Way to Better Pay

Take NRI training for as little as \$5 a month. Many NRI graduates make more in two weeks than the total cost of my training. Mail coupon today for Actual Lesson and 64-page Book—Both FREE. J. E. SMITH, National Radio Institute, Dept. 6BB, Washington 9, D.C. Our 40th Year.



I Trained These Men



"I have a regular job as a police captain and also have a good spare time Radio and Television service business. Just opened my new showrooms and shop."—C. W. LEWIS, Pensacola, Florida.



"I decided to quit my job and do TV work full time. I love my work and am doing all right. If fellows knew what a wonderful investment NRI is, they would not hesitate."—W. F. KLINE, Cincinnati, Ohio.



"Thanks to NRI, I operated a successful Radio repair shop. Then I got a job with WPAQ, later WBOB and now am an engineer for WHPE."—VAN W. WORKMAN, High Point, N. Carolina.



You Learn by Practicing with Equipment I Send



Nothing takes the place of practical experience. That's why NRI training is based on LEARNING BY DOING. My training includes kits of parts which you use to build equipment and get practical experience on circuits common to both Radio and Television. Shown at left is the low-power Broadcasting Transmitter you build as part of my Communications Course.



AVAILABLE TO **VETERANS** UNDER G.I. BILLS

Good for Both—FREE

Mr. J. E. Smith, President, Dept. 6BB
National Radio Institute, Washington 9, D.C.
Mail me Sample Lesson and 64-page Book, FREE.
(No salesman will call. Please write plainly.)

Name _____ Age _____

Address _____

City _____ Zone _____ State _____

VETS write in date of discharge _____

Approved Member, National Home Study Council

Go! Turn Your Waste Gas Into SUPER-POWER!

IT'S TRUE! Now you can get the breath-taking acceleration... jack-rabbit starts... blazing new power that you've dreamed about for years—*simply by harnessing the raw, unburnt gasoline that your engine is wasting today!*

You can get performance from your present car that will make your friends gasp with astonishment—and you can save \$25, \$50, even \$75 a year on gas bills alone doing it!

Yes! You, yourself, can fit this amazing GASOLINE ATOMIZER onto your car in as little as 20 easy minutes! And it is guaranteed to pay you back your full purchase price, in gas savings alone, in the first 3 to 4 short months that you use it.

By RICHARD JOHNS

Mr. Car Owner! How would you like to have the driving thrill of your life never weekend?

Picture this yourself! Next weekend go down to your car—the same tired car you've been driving for years. You've made one simple change to that car, so easy your 16-year-old son could do it! But now, when you turn on the ignition, a modern miracle of engineering science comes to life under your hood.

From the very first moment, you'll see and feel the difference in that engine. That engine will hum with new, throbbing power. When you release the emergency brake, your car will glide out of its parking space... roll down the street with your foot hardly touching the pedal. Every 30 or 40 seconds, give that car an extra shot of gas... feel it spurt ahead... test the new power that's singing under your foot!

We ask you to pull up to another car at the stop light at approximately the same year and make as your own! Wait until the light changes to green. Let the other car start first. Wait till the other car gets half way across the street. And then slam your foot down on the gas pedal!

Before that other car has even crossed the street, you will have caught up with him. For one brief second, you and that other car will race fender to fender. Then you will flash away from him... you will leave him a full block behind... you will look in your rear view mirror and see the startled look of amazement in the other driver's eyes!

FREE!

UP TO \$3 RETAIL VALUE! UP TO 2 TO 4 MILES MORE PER GALLON INSTANTLY, SAY THOUSANDS OF USERS.

THIS is probably the most widely sold piece of automotive equipment in the world! OVER HALF A MILLION DRIVERS have paid up to \$1 a set to put these amazing Air Bled Needles on their cars! And we brought out an entire factory at a sacrifice price! For this one advertisement only, we offer you these exact same needles *no FREE gift, even if you return it!*

A MINI-SUPERCHARGER. 1. They fit onto the carburetor of your car, where they replace the standard Jilling Adjustment Screw. Six-cylinder cars need only one Air Bled Needle (retail \$1.00). Eight-cylinder cars need two needles (retail price \$3.00). In either case, you simply unscrew the old needle and put in the new! THIS IS ALL! THERE'S NO IT! Even if you never looked under your hood be-



YOUR GAS SAVINGS!

Save this guarantee section. It authorizes you to try this amazing new MINI-SUPERCHARGER for a full four months ENTIRELY AT OUR RISK! This device must save you — on gas alone — EVERY SINGLE CENT OF THE MONEY THAT YOU PAID FOR IT... OR YOUR FULL MONEY WILL BE REFUNDED! This offer is good for a full four months. It is probably the most amazing offer in car history! You have nothing to lose! ACT TODAY!

Eugene Stevens, Inc.

TEST THIS NEW POWER A HUNDRED DIFFERENT WAYS!

But this is just the beginning! Test this equipment for one full month—entirely at our risk! Use it to flash away from other cars... spurt up the steepest hills... actually pass other cars in 2, 4, 6 and even 8 seconds LESS than you could have done formerly!

See the enormous gas savings it gives you at high speeds! Prove to yourself that at 50... 60... even 70 miles an hour, your foot is still half-way up on the pedal... you still need less reserve power you need to get out of any emergency on the highway!

Yes, and test it in stop-and-go city driving! Prove to yourself that it gives you the instant acceleration you need to get out in front of the crowd... with far less gas than you're using today! Prove to yourself that it can actually save you \$25 to \$50 to \$75 on your gas bills each year... that it actually pays back its full cost, in gas savings alone, during the first three or four months — or your full money back!

HOW DOES THIS PRODUCT GIVE YOU SUCH TREMENDOUS NEW POWER?

And you get all this performance... from a small, polished machine of bronze and aluminum that you can hold in your hand! Here's why:

Gasoline in its liquid form is

not explosive. If you accidentally drop a lighted match into a bucket full of gasoline, the chances are 10 to 1 that that gasoline will actually put out that match. But simply mix that same bucket full of gas with the proper amount of air, and you will have enough explosive power to drive a ten ton truck!

This machine SUPER-MIXES... SUPER-ATOMIZES your gas in exactly that way! Squeezes the hidden power out of that gas! Mixes that gas with much greater volumes of air! Makes that gas more explosive in your engine!

Men have paid up to \$600 for Superchargers! This is a MINI-SUPERCHARGER — easier to install — less expensive! But still the only power product you can buy with all these tremendous advantages:

1. Install it yourself, in just 20 minutes, even if you never picked up a tool before in your life!



2. Never needs further adjustments, for the life of your car!

3. Takes up no room in your car, makes no "souped-up" noise!

der dozens of leading car magazines call this the "money saving discovery of the year." Test this amazing gas-saver yourself — without rubbing a penny! THE THRILLING FACTS ARE ON THIS PAGE!

SO EASY TO INSTALL THAT EVEN YOUR 16-YEAR-OLD SON CAN DO IT!

Step 1. Locate Air Cleaner and Carburetor on top of your engine. Take an ordinary wrench and loosen the two or three bolts that hold the carburetor to the engine!

Step 2. Lift up the carburetor. Put MINI-SUPERCHARGER in place. What could be easier!

Step 3. Replace carburetor. Now turn on your engine! Then get in and take the most thrilling drive of your life!

TRY IT ENTIRELY AT OUR RISK

This MINI-SUPERCHARGER (U.S. Patent No. 2,409,987) sells for only \$11.95 for most cars or \$14.95 if your car has a special four barrel carburetor. This is your total cost—there is no installation fee! And, most important of all, we guarantee that you will save this full purchase in gas bills alone—in the first 3 to 4 months that you own this device.

You have nothing to lose! Try it entirely at our risk. You must get a whole new world of driving pleasure and economy or your full money back! Act today!

MAIL NO-RISK COUPON TODAY!

EUGENE STEVENS, INC.
132 WEST 21 STREET, DEPT. PR-6
NEW YORK 11, N.Y.

IMPORTANT!
For Fast Service,
Be Sure Coupon Is
Completely Filled In.

Yes, I want to try your amazing MINI-SUPERCHARGER entirely at your risk! I will pay postman only amount checked below plus low C.O.D. charges:

☐ \$11.95 (My car does not have a four barrel carburetor).
☐ \$14.95 (My car is equipped with a special four barrel carburetor).

I understand that it must do everything you say or my full money back! Also send me your Extra Gift Premium, the Free Air Bled Needle Set. I may keep the needles even if I return the MINI-SUPERCHARGER.

MAKE OF CAR _____ YEAR _____ Please Print
MODEL _____ 4 DOOR OR 2 DOOR _____
6 CYLINDERS _____ STRAIGHT 8 _____ V-8 _____
STANDARD TRANSMISSION _____ AUTOMATIC _____

ADDRESS _____
CITY _____ ZONE _____ STATE _____

☐ CHECK HERE TO SAVE MORE! Enclose check or money order, and we pay all postage and handling charges! You save as much as \$1.00. Same money back guarantee, of course! ©Copyright By Eugene Stevens, Inc., 1955

NEWSPAPER AND TELEVISION CAMPAIGN! WRITE FOR FREE DETAILS.



**Want better pay,
steady work and
a way to make
extra money?**

Learn at Home IN YOUR SPARE TIME to Fix Electrical Appliances

To build a better future, get into a field where there's much important work and the security that comes from knowing a good trade. Servicing electrical appliances offers that OPPORTUNITY. Every wired home has an average of 8 electrical appliances. Up to 10 million new appliances are sold every year and owners pay well to keep them in repair. That's making a fast-growing need for trained men.

Start Soon to Earn \$3, \$4, \$5, an Hour Extra in Your Spare Time

Start soon to fix electric toasters, clocks, fans, vacuum cleaners and other appliances for neighbors and friends. Work in your basement, garage or spare room. Pick up \$3 to \$5 an Hour *extra that way*. It's easy to increase your earning power—to pay for this training many times over with your spare time earnings.

Learn and Earn with Multi-Use Tester Built with Parts We Send

This course includes the parts to build a portable, sturdy Appliance Tester that helps you locate electrical defects quickly and easily. You use it to learn and do actual electrical appliance re-

pair jobs. If you want better pay learn this good trade. No need to give up your present job. You can train at home in your spare time for only \$2.50 down and \$5.00 a month. A small price to pay for increased earnings, a more secure future. Paste coupon below on a 2c postal or mail in envelope for free book and sample lesson. Address National Radio Institute, Dept. BB6, Washington 9, D.C.

**2c TO MAIL THIS
COUPON MAY START
YOU TO SUCCESS
LESSON AND BOOK
FREE**



NATIONAL RADIO INSTITUTE
Dept. BB6, Washington 9, D. C.

Please send me Electric Appliance Training lesson and book free.
(No salesman will call.)

Name.....Age.....

Address.....

City.....Zone.....State.....

APPROVED MEMBER NATIONAL HOME STUDY COUNCIL

NEW BODIES FOR OLD!



**I've Made New Men Out of
Thousands of Other Fellows...**

**"Here's what I did for
THOMAS MANFRE...and
what I can do for you!"**

—Charles Atlas

GIVE me a skinny, second-rate body—and I'll claim it so full of handsome, bulging new muscle that your friends will grow bug-eyed! . . . I'll wake up that sleeping energy of yours and make it turn into a high-powered motor! Man, you'll feel and look different! You'll begin to LIVE!

**Let Me Make YOU a NEW MAN—
IN JUST 15 MINUTES A DAY**

You wouldn't believe it, but I myself used to be a 97-lb. weakling. Fellows called me "Skinny." Girls made fun of me behind my back. THEN I discovered—"Dynamic Tension." And it turned me into such a complete specimen of MANHOOD that today I hold the title "THE WORLD'S MOST PERFECTLY DEVELOPED MAN."

My Secret — "Dynamic Tension"

When you look in the mirror and see a healthy, strapping fellow smiling back at you—then you'll realize how fast "Dynamic Tension" GETS RESULTS!

"Dynamic Tension" is the easy, NATURAL method you can practice in the privacy of your room—JUST 15 MINUTES EACH DAY—while your chest and shoulder muscles begin to swell, ripple bulge . . . those arms and legs of yours bulge . . . and your whole body starts to feel full of zip and zoi! And you'll be using the method which many great athletes use for keeping in condition—prize fighters, wrestlers, baseball and football players, etc.

FREE My 32-page Book—Not \$1. or 10¢ — But FREE

Send NOW for my famous book, "Everlasting Health and Strength," 32 pages, crammed with photographs, valuable advice, answers to many vital questions.

This book is a real prize for any fellow who wants a better build. Let I'll send you a copy absolutely FREE.

It may mean the turning point in your whole life! Rush the coupon to me personally! CHARLES ATLAS, Dept. 12, 115 East 23rd St., New York 10, N. Y.



**CHARLES ATLAS, Dept. 12
115 East 23rd St., New York 10, N. Y.**

Send me—absolutely FREE—a copy of your famous book, "Everlasting Health and Strength"—32 pages, crammed with actual photos, advice. I understand this book is mine to keep, and sending for it does not obligate me in any way.

Name _____ (Please print or write plainly) Age _____

Address _____

City _____ State _____

SAVE UP TO 74% ON FURNITURE...

Do Your Own



- ★ REPAIR
- ★ BUILDING
- ★ DECORATING
- ★ MODERNIZING
- ★ GLUING
- ★ REFINISHING
- ★ OVERHAULING
- ★ PAINTING
- ★ MAINTENANCE
- ★ REUPHOLSTERING

SIMPLIFIED DETAILS IN THIS BOOK

With "How to Build and Repair Your Own Furniture", big 256-page "how-to" book, you'll be able to own that furniture you've always wanted—and make your present furniture look brand-new! Popular Science Editors have poured all their knowledge and skills of home furnishing into one great book written especially for men who want to furnish their homes handsomely—at little cost! Detailed, easy-to-follow photos and directions make it easy!

BUILD FURNITURE FOR EVERY ROOM IN YOUR HOUSE!

You can make coffee tables, chairs, desks, lamps, bookcases, kitchen equipment, consoles, cabinets, children's furniture, plastic furniture, cabinets—for all types of decorating—period or modern! Most of the 163 simplified projects can be done with simple tools found in any home!

SEND NO MONEY NOW!

Just mail coupon below with your name and address and pay postman the low, low price of \$2.49 (plus postage) on delivery. After 7 days free trial, if not satisfied, return book for money back. But hurry, supply is limited!

MAIL FREE-TRIAL ORDER FORM TODAY!

**POPULAR SCIENCE PUBLISHING CO., Dept. 256
353 Fourth Avenue, New York 10, N. Y.**

Please rush my copy of "How to Build and Repair Your Own Furniture" in edition checked below. When postman delivers my copy, I'll pay low price indicated, plus postage. If not completely satisfied, I may return book within 7 days for full refund.

- ☐ Regular Edition, bound in handsome Linen Finish Kivar, Only \$2.49 #98 ☐ Deluxe Edition, Stamped in Silver Color, bound in Red Duotone Kivar, Only \$2.99 #7017

NAME _____ (Please print plainly)

ADDRESS _____

CITY & ZONE _____ STATE _____

☐ Check here if you remit now. We pay postage. Same return guarantee.

INVENTORS

Learn how to protect your invention. The U. S. Patent Laws provide that any new and useful art, machine, article of manufacture, or composition of matter, or any new and useful improvement thereof, may be patented if the act of invention is involved. Therefore, every inventor with a valuable invention should take advantage of the Patent Laws and proceed for patent protection in order to safeguard his rights.

A patent gives the inventor the exclusive right to prevent others from making, using, or selling the invention claimed in the patent for a period of seventeen years.

The Patent Laws were enacted for the benefit of the inventor to give him protection for the features of his invention which are patentable. These features must be properly and concisely set forth and claimed in a formal application for patent, in order to comply with the requirements of the Patent Laws. For that reason, unless the inventor is familiar with patent matters, he should engage a competent registered patent attorney or agent to represent him. We are registered to practice before the U. S. Patent Office and are prepared to serve you in the handling of your patent matters.

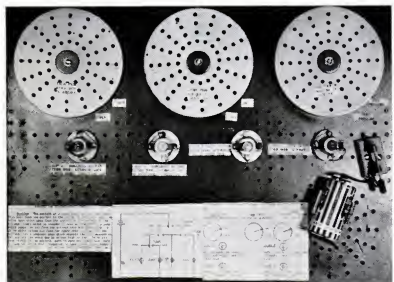
A specially prepared booklet entitled "Patent Guide for the Inventor", containing detailed information with respect to patent protection and procedure, together with a "Record of Invention" form will be promptly forwarded to you without obligation upon request.

CLARENCE A. O'BRIEN & HARVEY JACOBSON

Registered Patent Attorneys

62-B DISTRICT NATIONAL BUILDING
WASHINGTON 5, D. C.

Can you think faster than this Machine?



step on an exciting interplanetary chase pitting yourself against the machine. When GENIAC is set up to play "TIC-TAC-TOE" your moves are matched play by play by the instant reaction of special circuits trying to outthink you. GENIAC can be set to test your intelligence, to invent codes, figure out the best circuits for complicated household or experimental wiring; it reasons, compares, solves complicated legal problems, dozens of others.

BUILD YOUR OWN GENIACS WITH THE ELECTRICAL BRAIN CONSTRUCTION KIT

You will find building and using GENIACS a wonderful experience; one kit user wrote us "this kit has opened up a new world of thinking to me." You actually see how computing, problem solving and game playing (Tic-tac-toe, Nim) are set up for a machine and then you build the circuits yourself. When you have finished with the manual you have had experience with all the basic types of digital circuits and can then go on to your own designs.

If you have been intrigued by the new developments in computers, circuitry, Boolean Algebra, cybernetics and automation, GENIAC is the perfect way to get into the midst of the field and know what you are talking about.

Each kit comes complete with a manual, an intro-

duction to the use of Boolean Algebra in electrical circuit analysis, all necessary wiring diagrams and a 200 page text "Minds and Machines".

Every kit is guaranteed to satisfy you even after you have used it for a week or you can return it for a full refund.

The GENIAC ELECTRICAL BRAIN CONSTRUCTION KIT contains complete, easy-to-follow instructions for assembling all materials necessary including precision made parts that would cost over \$40 if bought separately. Plus the manual which contains over 30 exciting brain teasing games, problems, puzzles, etc. This educational hobby brings hours of fun and adult entertainment, yet GENIAC is so simple even a youngster can put it together.

Some of the 33 GENIACS you can build from the completely detailed instruction manual are:

LOGIC MACHINES: Comparing; Reasoning; Syllogism Machine; Intelligence Tester.

GAME PLAYING MACHINES: Tic-Tac-Toe; Nim (Think you can beat the machine?).

ARITHMETICAL MACHINES (Binary and Decimal): Adder; Subtractor; Multiplier; Divider; Arithmetic Carrying.

CODE MACHINES: Secret Coder; Secret Decoder; Combination Locks.

SIMPLE MACHINES: Burglar Alarm; Automatic Oil Furnace Circuit.

PUZZLE SOLVERS: The Space Ship Airlock; The Fox, the Hen,

the Hired Man and the Cunt; The Uranium Shipment and the Space Pirates.

ACTUARIAL: Douglas MacDonald's Will.

GENIAC parts are specially manufactured to high tolerance; they include a special six deck switch of unique design and over 400 components plus a book "GENIACS SIMPLE ELECTRICAL BRAIN MACHINES AND HOW TO MAKE THEM." GENIAC is a remarkable buy for

only \$19.95

MAIL THIS COUPON

SCIENCE KITS, Dept. P.S. 26

Oliver Garfield

126 Lexington Ave., N. Y. 16, N. Y.

Please send me:

1 GENIAC Electric Brain Construction Kit and Manual.

\$19.95 (East of Mississippi).....

\$20.95 (Elsewhere in United States).....

\$21.95 (Outside the United States).....

Returnable in seven days for full refund if not satisfied, I enclose \$..... in full payment.

My name and address are attached.

SOME FIRMS AND INSTITUTIONS THAT HAVE ORDERED GENIAC:

Allis-Chalmers
Remington-Rand
International Business Machines
Whellex Mfg. Co.
Manuel Missionary College
Walter V. Clarke Associates
Barnard College
Westinghouse Electric
Phillips Laboratories
General Insurance Co. of America
Lafayette Radio
Rohr Aircraft Co.
Southwest Missouri State College
Fiberglass Corp.
Stanford Research Institute
The Heath Co.
American Management Assoc.
De Paul University Hydro Electric Tower
Adams State Teachers College
Abercrombie and Fitch
Klein-Schmidt Laboratories

Kansas State Teachers College
Albert Einstein Medical College
Naval Research Laboratories
Board of Education, Tecumseh, Nebraska
Marshfield Public Schools
Los Angeles Public Schools
Jefferson Union High School
Oklahoma A & M
Kansas City University
Duke University
Coral Gables Senior High School
Courtland Jr. High School
Bell Telephone Laboratories
Lovell Public Schools
Clearwater High School
St. John's Seminary
Orange County Community College
Hornung College
New Hampshire Public School
Kentucky Wesleyan College
University of Ottawa

... and hundreds of other individuals and institutions

INVENTORS

If you believe that you have an invention, you should find out how to protect it. The first step is to have a search made of the prior pertinent U. S. patents. If a report on this search indicates that the invention appears patentable you can apply for a patent, and the specifications and claims should be prepared.

The firm of McMorrow, Berman & Davidson, with offices in Washington, D. C., is qualified to take the necessary steps for you. We can make a preliminary search on your invention, advise you whether we think it can be patented, and prepare your application for patent.

Unless you are fully familiar with the U. S. Patent Laws, we recommend that you engage the services of a Registered Patent Attorney to protect your interests. The patent laws are *your* laws. A patent gives you the right to prevent others from making, using or selling the invention claimed in your patent for a period of 17 years.

Use these patent laws for your protection. Investigate whether your invention can be patented. If you have what you believe to be an invention, we suggest that you have this firm make a search for you.

Send for a copy of our Patent Booklet entitled "How To Protect Your Invention," containing information about patent protection and patent procedure. Along with this we will also send you an "Invention Record" form, for your use in writing down and sketching details of your invention. We will mail them promptly. No obligation. They are yours for the asking.

McMORROW, BERMAN & DAVIDSON

Registered Patent Attorneys

PATENTS • COPYRIGHTS • PATENTS

142-R VICTOR BUILDING, WASHINGTON 1, D. C.



Years-ahead Quaker State
keeps your car at full power



Super-refined from Pure Pennsylvania Grade Crude
Oil, world's finest. Famous for performance,
protection, economy! Try it!

QUAKER STATE OIL REFINING CORP., OIL CITY, PA.
Member Pennsylvania Grade Crude Oil Association

Letters



Give Back Those Gauges

Phil McCafferty is so right! I, too, want the gauges Detroit left out [Nov., p. 214]. Those Christmas-tree lights that the new cars have in place of real instruments may be okay for Neanderthal drivers who can't read an ammeter anyway. But I like to know what's going on under the hood.

Take oil pressure. The red light won't blink until pressure falls to around 18 pounds. Why, you could lose a bearing at 19 pounds on a hot Sunday drive down here! And there would be nothing to warn of impending disaster until you heard that awful sound of metal chomping metal.

The same is true of the generator telltale. It won't warn of a discharging battery, but only of a failing generator. You could drive all the way to Dallas on a dead battery without getting that light to glow.

R. J. FRANKS, Houston

Anybody have a kind word for warning lights? PSM will award two \$25 U.S. Savings Bonds—one for the best letter for, one for the best letter against, the use of telltales in place of conventional gauges. Letters must be received by February 29 to qualify.

Aluminum Bolts for Antennas

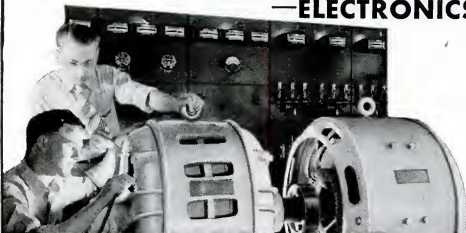
In Mr. Mandl's very interesting article "Is Your TV Antenna Worn Out?" [Nov., p. 224], he states, "Rusted bolts should be replaced with galvanized or copper ones." Inasmuch as a good many TV antennas are made of aluminum, I strongly suggest that aluminum bolts, which are available in most hardware stores, be recommended, rather than copper. Copper in direct contact with alumi-



THESE MEN ARE GETTING PRACTICAL TRAINING IN **ELECTRICITY**

—ELECTRONICS

On Real:



**A.C. and D.C. MOTORS
GENERATORS
SWITCHBOARDS
CONTROLLERS
WIRING JOBS
APPLIANCES
ELECTRONIC UNITS**

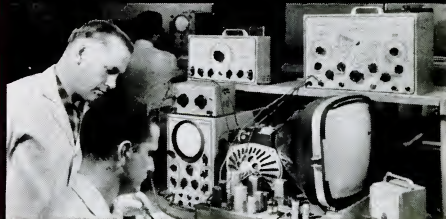
(Shown at left—Instructor explaining operation and testing of a large Motor Generator in our A.C. Department.)

AND **TELEVISION-RADIO**

On Real:

**TELEVISION
RECEIVING SETS
Including Color TV
AM and FM RADIO
RECEIVERS including
AUTO RADIOS
TELEVISION TEST
EQUIPMENT**

(Right — Instructor helping students check the wiring and trace circuits of television receivers.)



Train in the great **SHOPS** of **COYNE**

Largest, Oldest, Best Equipped School Of Its Kind In The U. S.

Whether 17 or up to 45 years of age, prepare for your future now. Don't be satisfied with a "No Future" job. Train the Coyne way for a better job in a field that offers a world of opportunities in the years ahead.

FINANCE PLAN Enroll now, pay most of tuition later. Part-time employment help for students. **WE TRAIN YOU IN CHICAGO** on real equipment. Trained instructors show you how, then you do practical jobs yourself. No previous experience or advanced education needed.

CLIP COUPON NOW for big new illustrated Coyne book "Guide to Careers in ELECTRICITY and TELEVISION-RADIO". No obligation; no salesman will call. Get vital facts now! **Training in Refrigeration and Electric Appliances can be Included.**



*Mail Coupon for
Big Free Book*

**Training Offered
to VETERANS
and
NON-VETERANS
Alike**

**B. W. COOKE, President
COYNE ELECTRICAL SCHOOL**

500 S. Paulina St., Chicago 12, Ill. Dept. 26-73H

Send FREE book and details of all the training you offer. This does not obligate me and no salesman will call. I am especially interested in:

- ☐ ELECTRICITY-ELECTRONICS
☐ TELEVISION-RADIO

NAME.....

ADDRESS.....

CITY.....STATE.....

B. W. COOKE, Pres.

COYNE FOUNDED 1899
ELECTRICAL SCHOOL

A TECHNICAL TRADE INSTITUTE OPERATED NOT FOR PROFIT
500 S. PAULINA STREET, CHICAGO, Dept. 26-73H

ELECTRICITY ★ RADIO ★ TELEVISION ★ REFRIGERATION ★ ELECTRONICS

"Do-it-yourself"



KITCHEN CABINETS

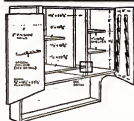
New book gives step-by-step directions, material lists, building pointers, "show-how" illustrations, for making every type of cabinet for the modern kitchen.

SAVE \$500 OR MORE

Now you can **SAVE HUNDREDS OF DOLLARS** on kitchen cabinets! Build your own with the aid of this great new "do-it-yourself" guide. Tells you everything you need to know. Large, clear drawings show every detail of construction. Easy-to-follow text gives you valuable pointers on how to save work, save on materials, and get a professionally-perfect job.

INCLUDES 70 TYPES OF CABINETS, plus dozens of ideas for ingenious labor-saving, step-saving kitchen units.

"HOW TO BUILD CABINETS FOR THE MODERN KITCHEN"



By **ROBT. P. STEVENSON**

Asst. Managing Editor,
Popular Science

TELLS YOU HOW TO BUILD: Over-Range Refrigerator Cabinet, Over-the-Range Cabinet, Sliding-Door Cabinet, Adjustable Shelf Cabinet, Mix-Center Wall Cabinet, Over-the-Sink Cabinet, Wall Vegetable Bin, Tool Hanging Cabinet, Swing-Shelf Cabinet, Combination Sink Cabinet, Tray and Bread Cabinet, Platter Cabinet, Laundry Hamper, Screen-Bottom Vegetable Drawers, Pop-Up Mixer Shelf, Beside-the-Range Towel Rack, Rolling Vegetable Bin, Sink Pull-Out Racks, Revolving Wall Cabinet, Lifting-Counter Cabinet, Pass-Through Serving Center, Canned Goods Storage Cabinet, Storage Wall, Folding Wall Table, Under-the-Counter Table, Curved-Seat Breakfast Nook, Snack Bar, Kitchen Desk, AND MUCH, MUCH MORE! FULLY ILLUSTRATED.

FREE 10-DAY TRIAL, SEND NO MONEY

See for yourself how this great new book helps you save money and gives you expert guidance on how to build your own kitchen cabinets. Mail coupon below for free-trial copy. After 10 days' trial, keep it and pay only \$4.95, plus few cents postage. Or return book and owe not a penny. **MAIL COUPON NOW.**

SIMMONS-BOARDMAN BOOKS, Dept. PS-256
30 Church Street, New York 7, N. Y.

Send me for 10 DAYS' FREE EXAMINATION, "How to Build Cabinets for the Modern Kitchen." I will either return it in 10 days and owe nothing, or send only \$4.95 (plus-shipping charge) in full payment.

Name.....

Address.....

City & State.....

☐ **SAVE! Send \$4.95 with this coupon and we will pay postage. Same return and refund privileges.**

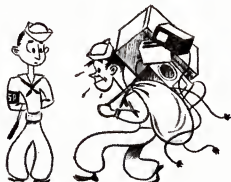
num is not desirable. Galvanized bolts are an acceptable alternate for aluminum bolts in contact with aluminum.

F.F. DIETSCH, Project Director
Reynolds Metals Co., Louisville

Good point. Direct contact between different metals should always be avoided. It causes rapid corrosion.

His Appliances Will Work Abroad

I am in the Navy and am being transferred to a place overseas where the electrical power is 110 volts, but 50 cycles. Will my 60-cycle appliances—an automatic washing machine,



radio, toaster, freezer and all the rest—work over there?

I will give you my new address as soon as possible because I do not want to miss an issue of PSM. I am pretty sure that, abroad, I will find the magazine more useful than ever, both from the standpoint of things to do and, also, to sort of keep in touch with things back home.

FRANK R. FOUST, Phot., USN
Washington, D.C.

Thanks for the kind words. All your American-made appliances—except an electric clock—will work on 50 cycles. But the washing machine may heat up.

How to Scale Up a Drawing

I would like to build that handsome side chair ("How to Build Good Furniture," Nov., p. 178), but I am at a loss as to the detailed measurements for the parts. True, there is a scaled layout, but that's all. How do you follow such a drawing and still come up with good workmanship?

ROY CURRY, Manhattan Beach, Calif.

You enlarge the scale drawing into a full-size pattern. Then you can take any measurements that you want off the pattern—by counting the squares on which it is drawn, or by using a rule or dividers. Here's how to

Work over
300 projects
with your
wonderful HOME
LABORATORY

Use and keep ALL these units to get
all-important **PRACTICAL EXPERIENCE**

MEMBER OF NATIONAL
HOME STUDY COUNCIL

21 INCH

Build and keep D.T.I.'s NEW
2 Unit TV Set—ideal for cus-
tom installation. (D.T.I. also
offers home training with-
out the TV set.)

NEW!

Build and keep
D. T. I.'s new
**VACUUM TUBE
VOLTMETER** ...
one of the most
useful of all test
instruments.

5 INCH
"SCOPE"

ABOVE: Also build
and keep this quality
Oscilloscope—almost
a "must" for Televi-
sion servicing.

NOW ... at home ... get D.T.I.'s
amazingly effective **NEW** training in

TELEVISION

RADIO-ELECTRONICS! Nothing else like it for providing real **LABORATORY-TYPE** training at home. Get the kind of thorough, practical experience **YOU NEED** for the kind of progress **YOU WANT** in today's tremendous field of Television, Radio and Electronics. Qualify yourself for real money ... interesting work ... a wonderfully promising future. And when you finish, D.T.I.'s active Employment Service **HELPS YOU GET STARTED!** Or open your own profitable Television-Radio Service Business.

**Exclusive
HOME
MOVIES**

help you grasp
important points
**FASTER ...
EASIER ...
BETTER.**
A tremendous
advantage!

THOUSANDS OF SUCCESSFUL GRADUATES

Why has D.T.I. become one of the largest training organizations of its kind? Because it provides **EVERY MAJOR HOME TRAINING AID** to help make the subject **EASIER** to learn ... **EASIER** to remember—the kind of training so helpful for **REAL PROGRESS**. Students get thorough, up-to-date, practical training that **TAKES ADVANTAGE** of new and improved training developments. Study the **ADVANTAGES** shown on this page. Think what they can mean to **YOU ... to YOUR FUTURE!** Or come to D.T.I.'s big Training Laboratories in Chicago. **MAIL COUPON TODAY** for complete facts—including valuable publication, "89 Ways to Earn Money in Television-Radio-Electronics." Also, valuable information for men subject to **MILITARY SERVICE**.

"One of America's Foremost Television Training Centers"

**Remarkable NEW Styrene
ELECTRO-LAB***

Insert pictorial diagram on transparent styrene base. (See insert.) Mount parts to follow pattern—using handy "snap in" fasteners. Eliminates wiring errors. Tops for speedy circuit changes ... for providing maximum circuit experience in minimum time. Build and operate scores of interesting projects—such as the electronic circuit shown below.

*Trademark

PATENTS APPLIED FOR

DeVRY
Technical Institute

CHICAGO 41, ILLINOIS

Formerly DeFOREST'S TRAINING, INC.

MAIL COUPON TODAY

DeVRY TECHNICAL INSTITUTE
4141 Belmont Ave., Chicago 41, Ill.
Dept. P.S.-2-M

I would like complete facts including "89 Ways to Earn Money in Television-Radio-Electronics."

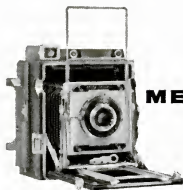
Name _____ Age _____

Street _____ Apt. _____

City _____ Zone _____ State _____

1 D.T.I.'s training is available in Canada.

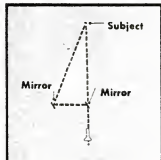
**89 WAYS TO
EARN
MONEY
IN
TELEVISION
AND
ELECTRONICS**



WHY 3 METHODS OF Focusing WITH

THE GRAPHIC® 45?

Three focusing methods are featured in the Pacemaker Graphic 45—one of many reasons why it is the most popular, most used all-purpose hand camera on the market. Let's examine these methods one by one.



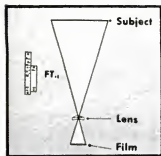
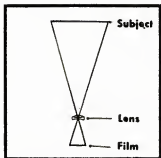
1. Coupled Rangefinder

Focusing with the new Graphic Rangefinder for normal eye level shooting—fastest method for all-around use. Interchangeable cams couple it to wide angle, normal or telephoto lenses. As you turn the focusing knobs on the cam-

era bed, the two images seen through the Graphic Rangefinder window gradually merge until at the point of accurate focus of the lens, both images are superimposed, clear and bright. Built-in Rangefinder for night focusing.

2. Ground Glass

Focusing is the original and basic method of determining sharpest focus and subject matter to be included in the finished picture. It enables you to see: a) your picture exactly as it will appear in the print; b) what parts of your picture are in or out of focus; c) how you can improve framing or composition. Ground glass focusing is a "must" for the serious photographer.



3. Scale or "Guess"

Focusing for quick "off the cuff" shooting—convenient for sports, action or ordinary snap shooting. You simply focus the lens with the focusing knobs on the front of the camera bed until the focusing scales on the bed indicate the estimated distance from the subject to the camera.

For the full story on Pacemaker Graphic 45's, write Dept. PS-26, Graflex, Inc., Rochester 8, N. Y.

GRAFLEX®

Prize-Winning Cameras

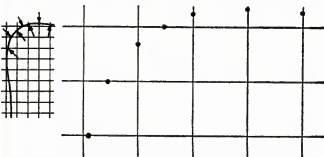
scale up a small drawing into a full-size pattern:

First, rule one-inch squares on a sheet



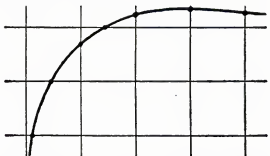
of wrapping paper at least 36 by 40 inches. Or buy graph paper printed with one-inch squares in a stationery store.

On the small drawing, note where the outline of each part crosses the small squares. On your big ruled paper, copy these inter-



sections into the corresponding squares. You will have something that looks like a child's "connect-the-dots" game.

Connect the marks on your sheet with



smooth, flowing lines. Copy exactly the shape shown in each square of the small drawing. That makes your full-scale pattern.

Warm Brick Comforts Pup

Your suggestion for keeping a homesick pup quiet by giving him an alarm clock may be a good one [July, p. 184], but I use a common brick warmed in the oven and wrapped in a blanket. It does the trick.

W. C. Fox, Nampa, Idaho

P. S. If you ever discontinue the Gus Wilson stories I will not know where to start reading your magazine. I always start with Gus.

Will it pay all of your bills today?

HERE'S WHAT AN EXPERT SAYS about the health insurance you now have ...

The American Magazine recently published an important article by Albert Q. Maisel, Your Health Insurance—Will it pay ALL the bills? Here is part of what he had to say:

"The health insurance that most of us carry just isn't broad enough—inclusive enough—to solve all the medical expenses which, sooner or later, confront most families."

It's a fact—five out of ten families must pay more than half of their medical expenses themselves in spite of the fact that they have some kind of health insurance.

WHAT'S WRONG with that insurance? Nothing—except, as Mr. Maisel says, it is simply not broad enough to cover all the costs of being sick.

THE NEXT TIME someone in your family gets sick there will be doctor bills. If it's the family breadwinner who is sick, family income will be cut off. And, it may be the serious illness or injury—the kind that costs thousands of dollars more than any ordinary policy could provide.

Where would you get the money to pay all those bills? You can find the answer in the White Cross Plan offered by Bankers Life & Casualty Company.

FOR EXAMPLE, under White Cross you can get policies that:

—Guarantee to pay you from \$2500 to \$5000 either in money to help pay medical bills or as a cash refund at maturity (NC-701) —

—Provide protection that cannot be cut off by the company no matter how often you get sick or have accidents (NC-701) —

—Provide up to \$5000.00 for a single sickness or injury. This is the new policy with the deductible feature (P86) —

—Provide money to help pay doctor bills, surgical fees, hospital extras, and costs of drugs, dressings, and medicines as well as hospital room and board (P6, P85, P89) —

—Provide as much as \$200 a month when the family bread-winner is disabled and unable to work while confined in a hospital or at home, under a doctor's care. You can plan this income for as long as 12 months in case of an illness, for as long as two years in case of an accident (P16) —

One thing to remember—this is protection that will pay you extra money—money in addition to what you might collect from some other "hospitalization."

YOU'LL FIND all the benefits, exceptions, and limitations clearly stated in the policies. Sickness benefits cover most illnesses originating after policies have been in force 30 days; accident benefits begin immediately from date of policies.

Get American Magazine's complete report

FREE!

Wouldn't you like to have Mr. Maisel's full report on your health insurance as printed in American Magazine? It is now available in handy re-print form, along with complete facts about the White Cross Plan.

Simply fill out and mail the free information certificate printed below. There is no cost or obligation.



© B. L. & C. Co.

THE WHITE CROSS PLAN OFFERED BY BANKERS LIFE & CASUALTY CO.

HOME OFFICE:



CHICAGO 30, ILL.

An Old-Line Legal Reserve Stock Company

OFFERING LIFE INSURANCE, AND BROAD COVERAGE
ACCIDENT AND HEALTH POLICIES BOTH GUARANTEED
RENEWABLE AND RENEWABLE AT OPTION OF THE
COMPANY

**Bankers Life & Casualty Co., Dept. PS-62
4444 W. Lawrence Avenue,
Chicago 30, Illinois**

FREE!

Please give me, FREE, all the facts about the White Cross Plan and a re-print of the American Magazine article, *Your Health Insurance ... Will it pay ALL the bills.*

NAME _____

ADDRESS _____

CITY _____

ZONE _____

OR RR _____ STATE _____

These great minds were Rosicrucians . . .



Francis Bacon Benjamin Franklin Isaac Newton

WHAT SECRET POWER DID THEY POSSESS?

Why were these men great?

How does anyone—man or woman—achieve greatness? Is it not by mastery of the powers within ourselves?

Know the mysterious world within you! Attune yourself to the wisdom of the ages! Grasp the inner power of your mind! Learn the secrets of a full and peaceful life!

Benjamin Franklin, statesman and inventor . . . Isaac Newton, discoverer of the Law of Gravitation . . . Francis Bacon, philosopher and scientist . . . like many other learned and great men and women . . . were Rosicrucians. The Rosicrucians (NOT a religious organization) have been in existence for centuries. Today, headquarters of the Rosicrucians send over seven million pieces of mail annually to all parts of the world. Address: Scribe S.F.C.

THIS BOOK FREE



The ROSICRUCIANS

San Jose (AMORC) California, U.S.A.

SEND THIS COUPON

Scribe S.F.C.
The ROSICRUCIANS
(AMORC)
San Jose, California, U.S.A.
Please send me the free book, *The Mastery of Life*, which explains how I may learn to use my faculties and powers of mind.

Name _____
Address _____
City _____
State _____

105 POWER SUPER TELESCOPE



Everything for the Astronomer, Hobbyist, Student, & Scout in this complete astronomical super value telescope combination. Comes ready for immediate use, consists of brilliant 33X—65X—105X telescope, 5 foot hardwood Tripod, carrying case for scope. Star Explorer map, 108 page book "Discover the Stars," 5 foot telescope (closes to 16 inches) is brass bound, has 4 precision lenses that will bring distant objects, people, moon, stars, ships, etc., 105 times closer. 11,025 area magnification. All images erect. Sturdily built tripod is equipped with universal mount that has 360 degree horizontal range & 180 degree vertical range. Locks in any position with one simple adjustment. The Star Explorer map enables you to find any star automatically. This marvelous all purpose instrument is provided by Scientists as a most unusual development. Everyone that has used it is amazed at its performance and value. It will fascinate the entire family. Shipped to you complete, nothing else to buy, at the amazing low price of

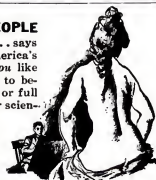
\$11.95
POST PAID

Satisfaction Guaranteed or money refunded. We pay all delivery charges. Send check or money order to DEPT. P559

CRITERION CO. 331 CHURCH ST., HARTFORD 1, CONN.

"WE'RE LOOKING FOR PEOPLE WHO LIKE TO DRAW"

... says Norman Rockwell, one of America's 12 Most Famous Artists. If you like to draw, you may have talent to become a successful artist, spare or full time. Find out for sure with our scientific, 8-page **Free Art Talent Test**. Thousands paid \$1 to take it. Get it FREE. No obligation. Send your name, address, age to: Famous Artists Schools, Dept. 11-B, Westport, Conn.



You can have a career instead of a job



Industrial growth . . . automation . . . technical advances create career opportunities for engineers, accountants, management experts. Share rewards awaiting college-trained men. Important firms visit campus regularly to employ Tri-State College graduates. Start any quarter in this world-famed college. Approved for veterans.

Bach. of Science degree in 27 months

In Mechanical, Civil, Electrical, Chemical, Aeronautical, Radio (TV, Electronics), Engineering, in 26 Months a B.S. in Business Administration (General Business, Accounting, Motor Transport Management majors). Capable students may accelerate. 30-weeks course in Drafting. Intensive program: technical fundamentals stressed; comprehensive courses with more professional class hours. Small classes: personalized instruction. For earnest, mature students whose time and budget requires accelerated courses and modest costs. Preparatory courses. Beautiful campus in friendly college town. Well-equipped, new and modernized buildings and laboratories. Enter March, June, Sept., Jan. Write Joan McCarthy, Director of Admissions, for "Your Career in Engineering and Commerce."



TRI-STATE COLLEGE

526 College Avenue Angola, Indiana



**GEE! IT MUST HAVE
TAKEN YEARS TO
LEARN TO PLAY
LIKE THAT!**



**(NOT AT ALL! I DIDN'T KNOW
A NOTE. YET I STARTED
PLAYING WHOLE PIECES
RIGHT AWAY!)**

Wonderful, Easy Way to Learn Enables You To PLAY REAL MUSIC Almost Overnight!

**ANY INSTRUMENT
EVEN IF YOU DON'T KNOW
A SINGLE NOTE OF MUSIC NOW!**

Yes, it's TRUE! In just a few weeks, you can be playing REAL MUSIC on your favorite instrument. Not by just a "trick" method that merely seems to teach you music. But really reading and playing actual sheet music—so easily and confidently that your friends will suspect that you've actually "known how" for years!

NO TEDIOUS PRACTICING OF BORING SCALES AND EXERCISES REQUIRED. Even if you don't know a single note now, you'll "start right in on pieces." This builds up your skill and confidence so rapidly that soon you'll be able to play ALL your favorite songs and compositions by note. It's all so clearly explained—so EASY to understand—that even children "catch on" at once.

No Special "Talent" Needed. No wonder OVER 900,000 PEOPLE all over the world have turned to the U.S. School of Music method to make their dreams of playing music come true! No special "talent" is needed. And you learn right

at home, in the spare time of YOUR OWN CHOOSING—free from the rigid schedule imposed by a teacher. Costs only a few cents per lesson, including sheet music.

Stop Cheating Yourself of These Joys! Why not let this famous home-study method bring the many pleasures of music into YOUR life? Popularity! New friends. Gay parties. Good times. Career. Extra Money... understand, appreciate, converse about. Learn lives and compositions of modern and great masters... Relax! Banish worries and frustrations. Satisfy self-expression, creative urge. Gain self-confidence.



SEND FOR **Free Book**



Let us SHOW you why our way to learn music is so EASY—and so much fun! See why our method has been so successful for 58 years. Mail the coupon below for our valuable 36-page FREE BOOK. No obligation; no salesman will call on you. It can mean so much to you for the rest of your entire life—if you will mail the coupon TODAY! **U. S. SCHOOL OF MUSIC, Studio 152, Port Washington, N. Y.** Our 58th successful year!

(Reduced Prices on instruments to our students.)

Thousands Now Play Who Never Thought They Could!



How Famous Orchestra Leader Got His Start!

"I got my start in music with your Course. How easy it is to learn to play this way! You did so much for me. I've enrolled my two daughters."

—Lawrence Welk.

Mother Fulfills Desire
"After I had been married 13 years I saw my chance to fulfill my desire to play piano. In a few weeks I could play pieces a friend couldn't who took ten years to learn from a teacher."—Mrs. J. L. Newton, Louisville, Ky.

Amazes Friends

"In a few weeks I could play several pieces. Everyone was amazed, also friends who had had lessons for years and whom it took 6 months to a year to play simple pieces."—Mrs. J. F. Perry, Princeton, W. Va.

Friends

"I bet friends I could learn piano quickly. They didn't believe me—because I am slow learning! Imagine their surprise last night when I played. One said, 'Sounds like you've played for years!'"—L. Gomez, Oakland, Cal.



**U. S. School of Music,
Studio 152, Port Washington, N. Y.**

I am interested in learning to play, particularly the instrument checked here. Please send me your free illustrated booklet, "How to Learn Music at Home." NO SALESMAN IS TO CALL UPON ME.

Mr. _____
Mrs. _____
Miss _____
(Please Print Carefully)

Address _____

CITY _____ State _____
(Zone Number, If Any)

NOTE: If you are under 18 years of age parent must sign.

- ☐ Piano
- ☐ Guitar
- ☐ Hawaiian Guitar
- ☐ Violin
- ☐ Piano Accordion
- ☐ Saxophone
- ☐ Clarinet
- ☐ Trumpet, Cornet
- ☐ Pipe, Hammond, Reed Organ
- ☐ Tenor Banjo
- ☐ Ukulele
- ☐ Trombone
- ☐ Flute, Piccolo
- ☐ Modern Elementary Harmony
- ☐ Mandolin
- ☐ Practical Finger Control

Do you have the instrument? . . .

Inventors

Take these necessary preliminary steps promptly to protect your invention by applying for a United States patent—

Sketch and describe your invention. Sign, date and have this disclosure witnessed by two people who understand your invention. Have us make a preliminary search among U. S. patents already granted for similar types of invention. We then report to you on the probable patentability of your invention and recommend your further course of action.

Write for our instructive booklet, "Patent Protection for Inventors" and our convenient "Evidence of Invention" disclosure form. No obligation.

VICTOR J. EVANS & Co. *Merlin M. Evans*
REGISTERED PATENT ATTORNEY
240-B MERLIN BUILDING, WASHINGTON 6, D. C.

PATENTS
C. A. SNOW & CO.
REGISTERED PATENT ATTORNEYS
WRITE FOR INFORMATION TO
426 SNOW BUILDING, WASHINGTON 1, D. C.

HARLEY-DAVIDSON DEALER OPPORTUNITIES

A few excellent opportunities are available to sell and service the world-famous Harley-Davidson motorcycle for pleasure, police, and commercial work. If you are mechanically inclined, like outdoor activities, enjoy selling and are willing to work to build a successful business for yourself, we want to hear from you.

Tell us about yourself; your age, business background and how much money you have to start—motorcycle experience desirable but not essential. You'll receive a prompt reply telling you about our franchise, factory co-operation and our extensive national advertising support.

Write Department PS-1

HARLEY-DAVIDSON MOTOR CO.
MILWAUKEE 1, WISCONSIN

INVENTORS

PROTECT YOUR INVENTION BY A
U. S. PATENT. SEND FOR FREE
"INVENTION RECORD" FORM AND
"PATENT INFORMATION
EVERY INVENTOR SHOULD HAVE".

CARL MILLER
REGISTERED PATENT ATTORNEY

WOOLWORTH BLDG., 35th FLOOR, 26C
NEW YORK CITY

INVENTORS

I shall be pleased to furnish you, upon request, with information relative to patent procedure—without any obligation on your part.

PATRICK D. BEAVERS
Registered Patent Attorney

937 Columbian Building, Washington 1, D. C.

INVENTORS

Whether an invention is patentable can be substantially determined by a search of the U. S. Patent records. Without obligation, write for information explaining the steps you should take to secure a patent.

JOHN N. RANDOLPH

Registered Patent Attorney

205 Columbian Building Washington 1, D. C.

INVENTORS

Send for
PATENT INFORMATION
Book and
INVENTOR'S RECORD
without obligation

GUSTAVE MILLER

26-PS WARNER BUILDING
WASHINGTON 4, D. C.

REGISTERED PATENT
ATTORNEY

ASSOCIATE EXAMINER
U. S. PAT. OFF. 1922-1929

Patent Attorney & Advisor
U. S. NAVY DEPT. 1930-1947
PATENT LAWYER

INVENTIONS WANTED

If you want to market, or sell, your invention for cash or royalties, Write for our Free Booklet, Send no drawings. We also welcome hearing from firms, or private capital, wishing to review inventions in any field. We will be glad to send notice of our clients' inventions.

GLOBAL MARKETING SERVICE

2420 77th Ave. Dept. SD Oakland 5, Calif.

BE A CLAIM INVESTIGATOR



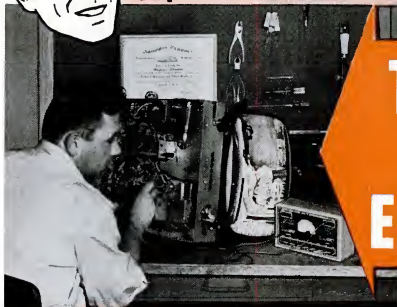
INVESTIGATE ACCIDENTS! Many earning \$750 to \$1000 a month. Thousands of insurance companies, airlines, steamship lines and Government Offices need Claim Investigators. Also big opportunities for your own spare time business. We train you at home. National Placement Service FREE of extra charge. Bill King writes: "Your course has paid off for me with large earnings. You can quote me—your Adjuster Training Course is worth many times the cost." Write TODAY for FREE Book.

UNIVERSAL SCHOOLS

University Park, Dept. PS-2, Box 8202 Dallas 5, Texas



Get more money!
More security! More out of life!



Learn TELEVISION • RADIO • ELECTRONICS

Get the best!

Get National Schools' SHOP-METHOD HOME TRAINING!

Start now! Why wait around for that raise or promotion that may never come? Get started now in high-paying TV-Radio-Electronics! National Schools' SHOP METHOD Home Training prepares you for success in a top-salary job or in your own business. You learn *all three*... Television, Radio, Electronics... in one complete course. Our Shop-Tested lessons and manuals help you master all phases in shortest possible time! Send coupon, find out today!

WHY NATIONAL SCHOOLS LEADS THE FIELD

Located in the "Television Center" of the world, our staff is in close touch with latest developments and opportunities. We give you personalized job placement assistance. We also give you confidential help with both technical and personal problems relating to your training. We show you how to make Part Time Earnings as you progress. Whether you live 30 miles away, or 3,000, you will always be pleased with our prompt, friendly service!

DRAFT AGE? Our home training helps you achieve specialized ratings and higher pay grades if you go in service.

30 MILLION TV SETS

need regular repair! Color TV means more sets than ever before. NOW is the golden opportunity to cash in on this multi-billion-dollar industry. Or "write your own ticket" in broadcasting, manufacturing, and other specialized phases!

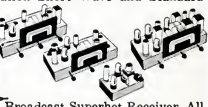
YOUR AGE

IS NO
OBSTACLE!

Send for
FREE LESSON!
FREE BOOK & SAMPLE LESSON
will convince you!
SEND COUPON TODAY!



We send you this precision-tested Multitester! Plus parts to build Oscillators, Receivers, Signal Generator, Continuity Checker, Combination Short Wave and Standard



Broadcast Superhet Receiver. All this equipment is part of your National Schools course. **NO EXTRA CHARGES!** Send coupon for free books!

NATIONAL SCHOOLS,
world-famous technical
trade school. Now in our
50th year!



NATIONAL SCHOOLS

TECHNICAL TRADE TRAINING SINCE 1905

LOS ANGELES 37, California • CHICAGO: 323 West Polk St.

IN CANADA: 811 West Hastings Street, Vancouver, B. C.

• APPROVED FOR G. I. TRAINING

• BOTH HOME STUDY AND RESIDENT COURSES OFFERED

MAIL NOW TO OFFICE NEAREST YOU!

(mail in envelope or paste on postal card!)

NATIONAL SCHOOLS, Dept. RC-26

4000 SOUTH FIGUEROA STREET
LOS ANGELES 37, CALIFORNIA

OR 323 WEST POLK STREET
CHICAGO 7, ILLINOIS

Please rush **FREE BOOK**, "My Future in Radio-Television-Electronics," and **FREE LESSON** at once. I understand there is no obligation, and no salesman will call.

NAME _____ BIRTHDAY _____ 19 _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

☐ Check if interested **ONLY** in Resident Training at Los Angeles.

VETERANS: Give date of discharge _____

WHAT ALL AUTO MECHANICS WANT TO KNOW

1664
PAGES



This Big Practical Book gives full information with working diagrams covering the principles, construction, ignition, service and repair of modern cars, trucks and buses.

Diesel Engines, Hydrumatic & Fluid Drives Fully Explained.

A complete Guide of 1664 pages, with over 1500 illustrations showing inside views of working parts, with instructions for service jobs.

IT PAYS TO KNOW

How to fit pistons—How to locate engine knocks, How to fit connecting rod bearings—How to service main bearings—How to recondition valves—How to service valves—How to adjust fan belts—How to adjust carburetors and chokes, How to rebuild a clutch—How to service automatic transmissions—How to service brakes—How to adjust steering gear—How to cope with ignition troubles—How to service distributors—How to time ignition—How to "tune up" an engine.

\$4 COMPLETE • PAY \$1 A MO. TO GET THIS ASSISTANCE FOR YOURSELF SIMPLY FILL IN AND MAIL COUPON TODAY.



Step up your own skill with the facts and figures of your trade. Audels Mechanics Guides contain Practical Inside Trade Information in a Handy Form. Fully illustrated and Easy to Understand. Highly Endorsed; Check the book you want for 7 DAYS FREE EXAMINATION. Send No Money. Nothing to pay postman.

MAIL ORDER

AUDELS, Publishers, 49 W. 23 St., NEW YORK, N. Y.

Please send me for FREE EXAMINATION books marked on below. If I decide to buy, I will return the books to you. I will pay \$1 in 7 days on each book or set ordered and further mail \$1 monthly on each book or set until I have paid price, otherwise I will return them.

- | | |
|---|-----|
| <input type="checkbox"/> AUTOMOBILE MECHANICS GUIDE, 1664 Pages. | \$4 |
| <input type="checkbox"/> TRUCK & TRACTOR GUIDE, 1299 Pages. | \$4 |
| <input type="checkbox"/> DIESEL ENGINE MANUAL, 575 Pages. | 2 |
| <input type="checkbox"/> MACHINISTS HANDY BOOK, 1650 Pages. | 4 |
| <input type="checkbox"/> WELDERS GUIDE, 400 Pages. | 2 |
| <input type="checkbox"/> BLUE PRINT READING, 416 Pages. | 2 |
| <input type="checkbox"/> MATHEMATICS & CALCULATIONS, 700 Pages. | 2 |
| <input type="checkbox"/> SHEET METAL PATTERN LAYOUTS, 1100 Pages. | 4 |
| <input type="checkbox"/> SHEET METAL WORKERS HANDY BOOK, 388 Pgs. | 1 |
| <input type="checkbox"/> MECHANICAL DRAWING GUIDE, 160 Pages. | 2 |
| <input type="checkbox"/> MECHANICAL DRAWING & DESIGN, 480 Pages. | 2 |
| <input type="checkbox"/> AIRCRAFT WORKER, 240 Pages. | 1 |
| <input type="checkbox"/> TELEVISION SERVICE MANUAL, 434 Pages. | 2 |
| <input type="checkbox"/> RADIIAMANS GUIDE, 1040 Pages. | 4 |
| <input type="checkbox"/> ELECTRONIC DEVICES, 216 Pages. | 2 |
| <input type="checkbox"/> ELECTRIC MOTOR GUIDE, 1000 Pages. | 4 |
| <input type="checkbox"/> WIRING DIAGRAMS (Light & Power), 272 Pgs. | 1 |
| <input type="checkbox"/> ELECTRICIANS EXAMINATIONS, 250 Pages. | 1 |
| <input type="checkbox"/> ELECTRIC POWER CALCULATIONS, 425 Pages. | 4 |
| <input type="checkbox"/> HANDY BOOK OF ELECTRICITY, 1440 Pages. | 4 |
| <input type="checkbox"/> ELECTRIC DICTIONARY, 9000 Terms. | 2 |
| <input type="checkbox"/> ELECTRIC LIBRARY, 7000 Pages (12 Book Set) | 18 |
| <input type="checkbox"/> REFRIGERATION & Air Conditioning, 1280 Pgs. | 4 |
| <input type="checkbox"/> MILLWRIGHTS & MECHANICS GUIDE, 1200 Pgs. | 4 |
| <input type="checkbox"/> POWER PLANT ENGINEERS GUIDE, 1500 Pages. | 4 |
| <input type="checkbox"/> ENGINEERS & FIREMANS EXAMS, 525 Pages. | 1 |
| <input type="checkbox"/> PUMPS, Hydraulics & Air Compressors, 1658 Pgs. | 4 |
| <input type="checkbox"/> OPERATING ENGINEERS LIBRARY (3 Books). | 9 |
| <input type="checkbox"/> MECHANICAL DICTIONARY, 950 Pages. | 4 |
| <input type="checkbox"/> GARDENERS & GROWERS GUIDES (4 Book Set) | 6 |
| <input type="checkbox"/> CARPENTERS & BUILDERS GUIDES (4 Book Set) | 6 |
| <input type="checkbox"/> PLUMBERS & Steamfitters Guides (4 Book Set) | 6 |
| <input type="checkbox"/> MASONS AND BUILDERS GUIDES (4 Book Set) | 6 |
| <input type="checkbox"/> PAINTERS & DECORATORS MANUAL, 450 Pgs. | 2 |
| <input type="checkbox"/> HOUSE HEATING GUIDE, 1000 Pages. | 4 |
| <input type="checkbox"/> DIL BURNER GUIDE, 384 Pages. | 4 |
| <input type="checkbox"/> HOME APPLIANCE SERVICE GUIDE, 800 Pages. | 4 |

Check NOW!

You Can Look Over Any Guide In Your Own Home — Start the Easy Payments If Satisfied

MAIL THIS TODAY

Name _____
Address _____
Occupation _____
Employed by _____

Even if You CAN'T DRAW

Anyone Can Draw With This Amazing New Invention—Instantly The "Magic Art Reproducer!"



A STRAIGHT LINE DRAW the FIRST DAY! NO LESSONS! NO TALENT! Also Excellent for Every Other Type of Drawing!

• Human Figures • Outdoor Scenes, landscapes, buildings • Still life, vases, bowls of fruit, lamps, furniture, all objects • Copy photos, other pictures, portraits, etc. • Copy blueprints, designs, decorations, etc., for woodwork, machine, for needlework, crocheting, knitting • Copy all cartoons.

Complete for only **\$198**



FREE with order

A.B.C. Guidance of Figure Drawing. This valuable illustrated guide contains simple, step-by-step instructions on drawing human figures. Includes techniques, shading, proportions, etc., to use with your "Magic Art Reproducer" for added touches to your drawings.

SEND NO MONEY! Free 10-Day Trial!

Just send name and address. Pay postman on delivery \$1.98 plus postage. Or send only \$1.98 with order, and we pay postage. 10 Day Trial must satisfy or money will be refunded.

NORTON PRODUCTS, Dept. 4402W, 286 Broadway, N.Y.C.

Learn To MOUNT BIRDS

Here's!

Best!

Hobby!

for

Fun & FREE

Profit

TAN SKINS, MAKE UP FURS
Be a Taxidermist. We teach you at Home. Mount Birds, Animals, Pets, common specimens. Save your hunting trophies. Decorate home and office. I make genuine KROME LEATHER, tan and make up furs for a lifetime profit. **INVEST** 49 cents—tells all about it.



It's Now Free. Send post card, state complete. IN. W. SCHOOL OF TAXIDERM, DEPT. 2002, Omaha, Nebr.

Free! NORTH AMERICA PLUS 87 FOREIGN FLAG STAMPS!



SENSATIONAL GET-ACQUAINTED OFFER

For stamp collectors and EVERYONE seeking an exciting new hobby. Get this big valuable collection of genuine, all-different postage stamps from Greenland (North Pole!), St. Pierre, Newfoundland, Alaska, Confederate States commemorative, Sensational Canada picturing walrus, rare whooping crane, Eskimos, Indians, scarce 1851 train stamp. United States: ancient 19th century; spectacular commemoratives—first Holy Bible, bucking broncos, wild west, etc. PLUS 87 gorgeous flag stamps of 87 different foreign countries! **EXTRA!** Scarce U. S. Telegraph PLUS other exciting offers, Bargain Catalog, valuable manual "How to Recognize Rare Stamps". **Enclose 10c for mailing costs.** Supplies are limited... **SEND TODAY!** **KENMORE STAMPS, MILFORD E682, NEW HAMP.**

START YOUR OWN BUSINESS!

ELECTRICAL APPLIANCE REPAIRING

**SECURITY — INDEPENDENCE
WORK SHORT HOURS**

There are millions of electrical equipment units in daily use . . . in factories, homes, office buildings and on farms. Skilled electrical technicians are needed to keep this equipment in good running condition. Learn at home in spare time.

You can now **BE TRAINED** to fill this **BIG NEED** . . . a need that grows day by day because of new electrical inventions for home and factory.

If you are mechanically inclined, can hold and use tools, we can give you the training and time-saving kits that will enable you to . . . **Command More Money at Work . . . A Better Paying Job Elsewhere . . . Or A Business Of Your Own!**

The **ELECTRONIC KIT**, a multi-purpose trouble detector, and other valuable Shop Method Training is sent to you! All instruction material is written in simple, easy-to-understand language, chock full of hundreds of detailed photos and drawings. Used by servicemen the country over.

We show you how to quickly locate the trouble, how to fix it and what to charge. **ALSO**, how to solicit business and keep business coming to you.

Get Full Facts on how you can get this training at home in your spare time and pay for it out of your earnings while learning!

FREE BOOK

On America's fastest growing industry
CHRISTY TRADES SCHOOL, Dept. D-6001, 4804 N. Kedzie, Chicago 25

CHRISTY TRADES SCHOOL, Dept. D-6001
4804 N. Kedzie Ave., Chicago 25, Ill.

Gentlemen:
Please rush me your **FREE ILLUSTRATED BOOK** about Electrical Appliance Servicing, facts on your Electronic Kit and Special form for paying later from earnings while learning.

NAME _____ Age _____

ADDRESS _____

CITY _____ Zone _____ State _____

IN YOUR OWN KITCHEN, BASEMENT, OR GARAGE

You don't need elaborate fixtures or expensive equipment to be a successful repairman. Work as many hours as you wish. The Electrical Appliance Technician is his own boss!

**\$5.00 - \$6.00
HOUR**

often charged for making ordinary repairs. We show you how to repair refrigerators, vacuum cleaners, washing machines, motors, etc., etc.

AGE IS NO BARRIER

Nor is a minor physical handicap. Work is light, pleasant and **PROFITABLE**.



EARN WHILE YOU LEARN!



Only had your course a few short weeks and have already made \$800.00. Going to quit my job paying \$250.00 straight salary to operate my own business. —J. D. S., St. Louis, Mo.

1 work day times at the shipyard and after 4:00 P. M. I operate from my cellar and garage. I average \$10.00 to \$15.00 clear every day. —Walter Hanby, Brockton, Mass.



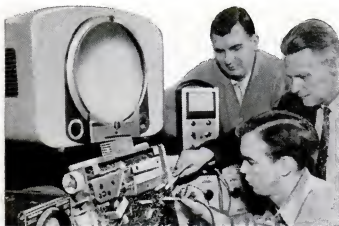
SEND COUPON TODAY



**WORKING KIT
FURNISHED**



Become an Electrical Engineer



- Major in Electronics or Power
- Earn B. S. Degree in 36 months

Over 50% of the nation's industrial leaders began their careers with engineering training. Prepare now for a rewarding future as an Electrical Engineer or Engineering Technician. Enroll at the Milwaukee School of Engineering.

Plan Your Career—Eight Courses Give You Wide Range of Study

ENGINEERING COURSES

Electrical Engineering—Bachelor of Science Degree
Solve a valuable year through optional year 'round study.
Electronics major 36 months
Power major 36 months

TECHNICIAN COURSES

Electro Technician 12 months
Electronic Technician 12 months
Radio Technician 12 months
Radio and Television Technician 18 months

SERVICE COURSES

Electrical Service 6 months
Radio and Television Service 12 months

MECHANICAL TECHNOLOGY COURSES

Also available, Service and Technician courses 6 to 18 months — Heating, Refrigeration, Welding, Air Conditioning and Mechanical — B.S. Degree in Mechanical Engineering with a major in Design, Metal Fabrication, or Plant Engineering. Also, general 3-month preparatory course.

Terms open April, July, September, January

Prior Military, Practical or Academic training evolved for advanced credit. Faculty of specialists. 50,000 former students. Annual enrollment from 48 states and 23 overseas countries. 52nd year. Non-profit. Residence courses only. Send handy coupon today.

MS-11A



MILWAUKEE SCHOOL OF ENGINEERING

MILWAUKEE SCHOOL OF ENGINEERING

Dept. PS-256, 1025 N. Milwaukee St., Milwaukee, Wis.
Send free illustrated career booklets ☐ Electrical Technology ☐ Mechanical Technology ☐ Radio-Television.

I am interested in _____ (name of course)

Name _____ Age _____

Address _____

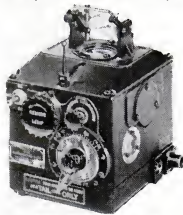
City _____ Zone _____ State _____

If veteran, indicate date of discharge _____

These brand new SPERRY Gun Sights

Cost the Air Force nearly \$200

Can you use one at this pennies-on-the-dollar price?



\$588
TAX AND POSTPAID

7.45 west of Mississippi

**EXPERIMENTERS
INVENTORS
TINKERERS
LABORATORIES**

Here's a partial list of what's inside!

- Silver Surface Optical Mirrors
- Electrical Fittings, Switches
- Big, 1 1/2-inch F:1.9 Optical Lens
- Scores of fine Gears... Cams
- 3 Miniature Differentials
- A 24-volt Rheostat and Lamp

Frankly we don't know what you'll do with these remarkable instruments! But we do know they're about the most amazing and intricate things we've seen. They're the original, super-secret (now declassified) Sperry gun sights that made our gunners the most deadly in the war. They're chock full of marvelously made gears, cams, wheels and electrical equipment, and put together with the precision and accuracy of a fine watch! Many individual parts are worth more than the price you pay now for the entire unit! Dimensions, about 8x6x6 inches; weigh 8 lbs. Brand new in original government cartons. Send for yours today.

RUSH YOUR ORDER TO:

JOSEPH SALES Co. Rm. 507-1740 E. 12th St.
CLEVELAND 14, OHIO



Bar Bells

BUY DIRECT FROM FACTORY **\$8.95**
Write for free booklet and price list up

INDEPENDENT IRON WORKS
2416 East 23rd Street, Dept. "C"
Los Angeles 58, Calif.



OWN YOUR OWN BUSINESS

Free folder tells how! Build and operate this profitable roadside stand—seasonal or year 'round. Mail coupon now.



RICHARDSON CORPORATION

Dept. PS-2, P.O. Box 790, Rochester 3, N.Y.

Please send me FREE folder on your tested, franchised refreshment stand.

Name _____

Address _____

Place _____

LAW TRAINING for BUSINESS

[in spare time at home]

Earn LL.B. Degree



Thousands of men and women who never intend to practice are studying Law in spare time at home—not for a legal career but as an aid to business advancement.

Law today is involved in almost every major business decision. In many lines of work it is almost indispensable—credits and collections, accounting, traffic and transportation, employee relations, real estate, insurance, finance, taxation, etc. For all types of work, Law training develops keen, clear, quick, correct, and decisive thinking.

You can study LaSalle's American Law and Procedure right in the privacy of your own home—progressing as rapidly as your time and ability permit. LaSalle has, for nearly 50 years, helped more than 1,350,000 ambitious people get ahead in the business world. Thousands of letters in our files from grateful students and businessmen who have achieved greater success speak of—better jobs, more money and the satisfaction it brings, prestige and leadership.

A MOST UNUSUAL LAW LIBRARY

This training includes the fourteen-volume LaSalle Law library—AMERICAN LAW AND PROCEDURE, which is the basis of all the instruction service. This library has been compiled by leaders in the field of Law. It covers the whole basic field of Law in an orderly and simple manner that is easy to learn and understand. Collateral reading and printed lectures on legal problems which are furnished at regular intervals throughout the training, supplement the text. Law instructors personally supervise your program from the first assignment to the LL.B. degree or diploma. Under the LaSalle method you deal with legal problems—you learn by

doing—actually solving legal problems—not just memorizing rules.

WRITE TODAY FOR TWO FREE BOOKS

You are determined to get ahead—to prepare for greater future possibilities—and to earn more money. Send the coupon below and find out how to qualify yourself for the many openings available to the Law-trained man. In our FREE books, "Law Training for Leadership" and "Evidence," you will find answers to all your questions about the study of Law and the LaSalle method.

No investment is likely to pay higher returns than an investment in yourself, by enrolling in the American Law and Procedure training. Send coupon today for full information—no obligation, of course.

LaSalle Extension University

A Correspondence Institution

Dept. 283L 417 S. Dearborn St., Chicago 5, Ill.

Gentlemen: Please send me your two free booklets, "Law Training for Leadership" and "Evidence," which tell how I may study Law at home and qualify for the LL. B. degree.



Name Age

Street

City Zone State

"I'LL RIPPLE YOUR BODY WITH MUSCLES — LOAD T-N-T IN YOUR FISTS"

says Joe Louis

Add solid new muscle to your body. Guaranteed in 10 days.

Ten Champions are ready to help you build a body that men respect and women admire. They know you want action and they promise it fast...in their medically approved Conditioning Course.

Joe and other great Champions guarantee that in just ten days you'll feel better...be more aggressive. With their special Exercises you'll pack more power and gain new confidence — for only \$1.00—or your money back.

Your mirror will show new muscles in only ten days. That's the promise of world Champions.



ONLY \$1.00

LET GREAT STARS HELP YOU...



WHITE LOCKMAN explains his sure-fire method to stimulate circulation and loosen you up for action LOTS OF FUN



YOGI BERRA, the American League's most valuable player builds up your confidence . . . QUICK



KID GAVILAN sharpens your reflexes . . . develops stamina and toughens your body with his training camp workout . . . WITH LITTLE EFFORT

EXTRA! You'll also receive exciting material from the Champions' Manly Art of Self Defense Home Course IT'S TRULY AMAZING

FREE —Joe Louis' 24 page "Fight Secrets," free, if you act at once.



The National Sports Council, Dept. Q-26
33 West 46th St., New York 36, N. Y.

Enclosed \$1 for the Planned Conditioning Course of the Champions. I must see results in 10 days or my money is refunded immediately. Fight Secrets is free.

NAME _____

ADDRESS _____

CITY _____ STATE _____

MAIL COUPON TODAY

start a big profit business with a small investment EARN UP TO \$200 a DAY

Manufacturing Exciting New

RAINBOW ROCK

Concrete Slump Brick in your back yard

Earn big building boom profits with Rainbow Rock, the colorful new building brick that's taking the country by storm. Sell all you can make to contractors, builders, building supply houses. **RAINBOW ROCK CUTS LABOR COSTS BY 1/3!** Amazing low cost machine makes modern slump brick 24" long (3 times the length of ordinary brick) in a variety of widths and pastel colors — up to 1500 bricks a day! **NEEDS NO SPECIAL SKILL.** Operates indoors or out. Full instructions and valuable mixing formulae supplied. **YOU CAN START EARNING BIG MONEY NOW.** **PAY AS YOU PROFIT!** A limited number of machines available on easy payment terms. NOW is the time to start. Write today for free literature and full information.

GENERAL ENGINES CO. INC.

Dept. SR-26 Route 130
Thorofare, N. J. Tilden 5-5401



STEEL PIER SENSATION
Luxurious RAINBOW ROCK fireplace wall in living room of the "Home of the Century" in Atlantic City, N. J.'s Steel Pier...acclaimed by over 500,000 Summer, 1953 visitors as the most beautiful they'd ever seen! Endorsed by the Pier's famous architect, William F. B. Koelle.



Makes beautiful, decorative fences, garden walls, garages, outside walls, room separators, etc.

'How to MAKE MONEY with Simple CARTOONS'



A book everyone who likes to draw should have. It is free; no obligation. Simply address **FREE BOOK**

CARTOONISTS' EXCHANGE

Dept. 192D Pleasant Hill, Ohio

LEARN PLASTICS



COMPLETE LOW COST SHOP METHOD HOME TRAINING NOW AVAILABLE

Get in on Big Money opportunities in Plastic molding, casting, forming, carving, etc. Earn as you learn with Interstate's professionally prepared course. All plastic materials furnished.

WRITE FOR FREE BOOKLET INTERSTATE TRAINING SERVICE
DEPT. C-2, PORTLAND 13, OREGON

I'll Send You This Handsome SAMPLE CASE - FREE



and Show You How to Make Up to \$30.00 in a Day
Mail coupon for this Free Tailoring Sample Case packed with 150 beautiful, big-value suit and overcoat fabrics. Take orders from friends, fellow-workers, others, for fine quality, made-to-measure clothes. Pocket big cash profits in advance. Because wearing our suit and overcoats brings more orders, we make it easy for you to get your own clothes without le cost. No experience is needed. **SATISFACTION GUARANTEED.** **SEND NO MONEY.** Just fill out and mail coupon today!

W. Z. GIBSON, INC., 800 South Throop Street DEPT. N-520 CHICAGO 7, ILLINOIS

W. Z. GIBSON, INC., Dept. N-520 500 S. Throop St., Chicago 7, Ill.

Dear Sir: I WANT A MADE-TO-MEASURE SUIT TO WEAR AND SHOW, without paying for it. Rush details and Sample Kit of actual fabrics. **ABSOLUTELY FREE.**

NAME _____ AGE _____

ADDRESS _____

CITY _____ STATE _____

Electronics Boom Seen

Need For Television Technicians To Rise

Industry Warned About Shortage Of Trained Men

TV SALES SET NEW RECORD

Sylvania Head Expects Huge Electronic Gains

Transistor Radios Developed

RCA HEAD PREDICTS SALES BOOM FOR COLOR TV SETS

VETERANS - - NON-VETERANS

Get Into The Field That's Making Headlines



L. E. Lane, R.E., N.A.
President, Radio-Television
Training Association
Executive Director, Pierce
School of Radio & Television

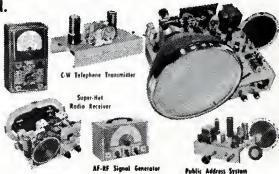
All over the nation the Television-Radio-Electronics industry is making News — News that means opportunity for YOU. You can cash in on the headlines.

I WILL TRAIN YOU AT HOME FOR A TOP-PAY JOB IN TELEVISION

I will prepare you for a spot in America's fastest-growing industry. You can become a trained technician in your spare time without giving up your present job or social life. No experience needed.

LEARN BY DOING

Combination Voltmeter
Ammeter-Ohmmeter



As part of your training I give you the equipment you need to set up your own home laboratory and prepare for a top-pay job or set up your own business. You build and keep an Electromagnetic TV RECEIVER designed and engineered to take any size picture tube up to 21-inch. (10-inch tube furnished. Slight extra cost for larger sizes.) . . . also a Super-Het Radio Receiver, AF-RF Signal Generator, Combination Voltmeter-Ammeter-Ohmmeter, C-W Telephone Transmitter, Public Address System, AC-DC Power Supply. Everything supplied, including all tubes.

STUDY NEWEST DEVELOPMENTS

My training covers all the latest developments in the fast-growing Television-Radio-Electronics industry. You learn about FM — RADAR — COLOR TV — TRANSISTORS — PRINTED CIRCUITS, etc.

CHOOSE FROM THREE COMPLETE COURSES

covering all phases of Radio, FM and TV

1. Radio, FM and Television Technician Course — no previous experience needed.
2. FM-TV Technician Course — previous training or experience in radio required.
3. TV Cameraman and Studio Technician Course — advanced training for men with Radio or TV training or experience.

EXTRA TRAINING IN NEW YORK CITY AT NO EXTRA COST!

After you finish your home study training in Course 1 or 2 you can have two weeks, 50 hours, of intensive lab work on modern electronic equipment at our associate resident school, Pierce School of Radio & Television. THIS EXTRA TRAINING IS YOURS AT NO EXTRA COST WHATSOEVER!

FCC COACHING COURSE

Important for BETTER-PAY JOBS requiring FCC License! You get this training AT NO EXTRA COST! Top TV jobs go to FCC-licensed technicians.

VETERANS

My School fully approved to train Veterans under new Korean G. I. Bill. Don't lose your school benefits by waiting too long. Write discharge date on coupon.

Radio Television Training Association

52 EAST 19th STREET • NEW YORK 3, N. Y.

Licensed by the State of New York • Approved for Veteran Training

EARN WHILE YOU LEARN

Almost from the very start of your course you can earn extra money by repairing sets for friends and neighbors. Many of my students earn up to \$25 a week . . . pay for their entire training with spare time earnings . . . start their own profitable service business.

FREE HOW TO MAKE MONEY IN TV	FREE SAMPLE LESSON
------------------------------------	-----------------------

I'll send you my new 40-page book, "How to Make Money in Television-Radio-Electronics," a Free sample lesson, and other literature showing how and where you can get a top-pay job in Television.

MAIL THIS COUPON TODAY!

Mr. Leonard C. Lane, President
RADIO-TELEVISION TRAINING ASSOCIATION
Dept. P-2C, 52 East 19th Street, New York 3, N. Y.

Dear Mr. Lane: Send me your NEW FREE BOOK, FREE SAMPLE LESSON, and FREE aids that will show me how I can make TOP MONEY IN TELEVISION. I understand I am under no obligation.

(PLEASE PRINT PLAINLY)

Name _____ Age _____

Address _____

City _____ Zone _____ State _____

I AM INTERESTED IN:

☐ Radio-FM-TV Technician Course

☐ FM-TV Technician Course

☐ TV Cameraman & Studio Technician Course

VETERANS!

Write discharge date

NO OBLIGATION!

FOR A REAL JOB OR A
BUSINESS OF YOUR OWN

LEARN OIL BURNER SERVICING

at home—in your spare time!

GET THE FACTS FREE!

Let us send you—without obligation—a Sample Lesson plus all the information you'll need to get you started on the road to success in the automatic oil heating field. Let us prove to you that salaries are higher, opportunities greater, advancement quicker in the fast-growing Oil Burner industry.

5 PROGRAMS IN ONE. We offer you a complete and approved training program—available at no other school—prepared with the co-operation of America's leading heating system manufacturers. Covers Installation, Operation, Maintenance and Service plus Electrical Controls, Firebrick Construction and Sheet Metal Fabrication. Even includes a "Special Business" Plan to help you start your own service shop.

START NOW . . . TODAY! Put your spare time to work. Learn a skilled trade. No previous experience or special education required. Earn while learning, doing part-time jobs in your own area. Low tuition. Tools furnished. Send coupon now. No obligation.

MASS. TRADES "Training Thousands since 1936"

RESIDENT SCHOOL—APPROVED FOR VETS
LICENSED BY MASS. DEPT. OF EDUCATION

Member—Oil Heat
Institute of America



Write NOW for
FREE SAMPLE
lesson and booklet.
No obligation. Use
the coupon below.

MASS. TRADES

161-B High St., Boston 10, Mass.

Please rush **FREE** booklet and Sample Lesson on OIL
BURNER SERVICING. I understand there is no obligation.

Name Age.....

Address

City Zone..... State.....

TRAINING AVAILABLE IN CANADA



22 YEARS AT THIS ADDRESS
AN ESTABLISHED POLICY OF CAREFUL
SELECTION ASSURES YOU MANY HAPPY
MILES. BE WISE—TRY ONE—YOU'LL BUY
MORE! WE WELCOME COMPARISON. NO
ONE CAN TOUCH OUR QUALITY & PRICE!
White Walls \$1.00 EX. 50 Years of Com-
bined family experience in High Quality
Tires. "FREE TUBE", PARTIALLY USED
TIRES—AND OTHERS.

DEDUCT \$1.00 from every Passen-
ger Tire you buy—
Does not include W.W., Truck or Snow Tires

SPECIALISTS IN TRUCK TIRES—
Selected for Toughest Jobs—Tops in Value

36 MOS. WRITTEN GUARANTEE

I FEEL FINE! How Do Your Tires Feel?

600-16 \$5.35	475-19 \$4.75	700-15(6) 7.15	700-20 \$8.95
600-16(6) 5.75	460-15 5.15	750-16(6) 1.95	750-20(10) 15.75
450-16 5.75	670-13 5.15	700-17 7.85	750-20(8) 9.85
650-16(6) 6.45	710-15 5.45	700-18 10.05	825-20 16.45
700-16 5.75	760-17 5.45	825-15 12.95	900-20 15.55
750-16(6) 8.85	800-15 5.35	600-20 8.05	1000-20 18.75
450-16 5.55	820-15 7.75	650-20 8.35	1100-20 17.45
550-17 4.55	670-16 5.35	325-10 13.95	1000-22 16.75
650-18 5.05	700-16(6) 7.15	750-15 10.75	1100-22 16.75

ALL WHITE WALLS \$1.00 EXTRA

"EXTRA SPECIAL" Some near New all size tires

DEDUCT 1.00 from These also.—W. W. \$1.00 Extra

Factory Tested Tube Given, **GIANT TIRE SALE** \$7.65

Thousands of tires shipped all over the U.S.A. All tires shipped

F.O.B. Phila. Send check or M.O. with this ad. Dept. 5, No C.O.D.

STANDARD 834 N. Broad St., Philadelphia 30, Pa.



LEARN MODERN WATCH AND CLOCK REPAIRING

Complete Course—Only \$5.95

At home, spare time. Good field work. Security and contentment in future. Start part-time business and **EARN** while you learn. Horology is precision instrument work...a great and growing field, sensational opportunities. Easy self-instruction course. Full price, only \$5.95. **SEND NO MONEY.** Just pay postman, plus C.O.D. postage. Or send \$5.00 with order. We'll ship postpaid. Satisfaction guaranteed or refund. **NELSON-HALL CO., 210 S. Clinton St., Dept. 38U-1, Chicago 6, Ill.**

Secrets of VENTRILOQUISM Now Revealed!



Easy to learn in 60 to 90 days with our Home Study Course. **RESULTS GUARANTEED.** Make Money! Be Popular! Have Fun! Big Opportunity! Radio, Television, Stage Appearances! For Free information regarding price and terms, write: You must state your name. **Dummett Catalog 250, FRED NAHER SYDNEY, OF VENTRILOQUISM Box 36, Studio PS-2, Kensington Station Detroit 24, Michigan**

LOOK! A MILLION THRILLS!

High Power
BINOCULARS
33 Models: \$9.95 to \$125
Free! Catalog & Book
"How to Select Binoculars"
BUSHNELL Binoculars
Dept. P22 43 E. Green
Pasadena, Calif.

WEL YOUR WAY AHEAD!

Learn Arc and Gas Welding In Spare Time

Your opportunities are greater when you learn to use this great tool of modern industry. Training in welding opens the door to many key industries. Now you can train at home with UET's practical course. Includes techniques, metallurgy, blueprints, shop practices, other important phases.



Write For **FREE** Facts! You can follow home-study training with actual shop practice. High school diploma not necessary. Write NOW!

UTILITIES ENGINEERING INSTITUTE

2523 Sheffield Ave., Dept. WM-6, Chicago 14, Ill.

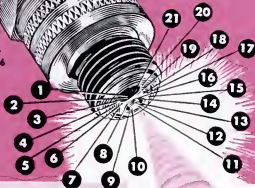
New Spark Plug Invention!

SELF-CLEANING, 21 POINT

Nickel-Cadmium SPARK PLUG

TESTS PROVE: ★ 10 HORSEPOWER GAIN
★ 9 MPH GREATER SPEED
★ 15% FUEL SAVING

U. S. PAT.
NO. 1305666



THE INSULATOR... High-voltage patented Ebanite® insulator, developed and used only by Life-Long, has a hardness in the same range as precious jewels. You can identify Life-Long Plugs by the black insulators. This costly new material has 20 times higher thermal conductivity than ordinary insulators.

THE BUSINESS END

... New type solid electrodes have no points to burn off! The "business" end of Life-Long Plug utilizes unique nickel-cadmium electrodes to produce fuller, hotter spark arcing from 21 or more points and spreading around the full 360° circle. Life-Long Plugs have approximately 40 times more firing surface than conventional one-electrode plugs, giving more efficient, even combustion.

THE SHELL... Made of a new alloy developed specifically for Life-Long by modern metallurgy. Unlike old style 2-piece shells, the Life-Long shell is one precision-machined piece fused to the Ebanite insulator under tremendous hydraulic pressure and induction to make a positive seal. This prevents "blow-by," major cause of failure in plugs with 2-part shells.



Bonded Guarantee

"I certify that the set of self-cleaning, 21 pt. Life-Long Nickel-Cadmium Spark Plugs you will receive are identical to those used in my own car for over 100,000 miles. I guarantee that Life-Long Plugs will give you an immediate horsepower and mileage gain and will continue to fire clean, hot and steady without cleaning or regapping!"

J. M. Wate
J. M. WATE, President
LIFE-LONG SPARK PLUG CORP.

Only spark plug guarantee backed by a cash bond held by an independent financial institution (details on request).

OPPORTUNITY FOR DISTRIBUTORS
Many choice territories are still available. All territories are awarded on an exclusive basis, protected by a written franchise. No charge for franchise. Write, wire or phone today. Cable: Sparcorp, Los Angeles

LIFE-LONG NICKEL-CADMIUM PLUGS ARE GUARANTEED TO:

- 1—End plug replacement costs
- 2—Step up engine horsepower
- 3—Increase your gasoline mileage
- 4—Improve acceleration
- 5—Give smoother idling
- 6—End engine knock
- 7—Never need regapping

With the introduction of sensational new-type Life-Long Nickel-Cadmium Plugs, the spark plug is no longer the "most troublesome, most often-replaced" part of your automobile. In fact, you will never have to replace the plugs in your car once you install a set of Life-Long Plugs!

LIFE-LONG—WORLD'S ONLY PLUG WITH FULL-CIRCLE FIRING

Life-Long's revolutionary "ring of fire" principle is the first major improvement in plugs in 25 years. Instead of small "spot" spark arcing between the same two points, the Life-Long Plug makes a hot spark 400% to 500% greater in volume, spread around the entire circumference of the solid electrode. The piston stroke of today's high-compression engines is so powerful that it can actually "blow out" the spark produced by old type plugs. Blowing out is impossible with Life-Long's full-circle spark.

Heat is spread around the full perimeter, resulting in cooler electrode temperature. The causes of wear, burning and insulator failure are eliminated.

SELF-CLEANING. Because the Life-Long Plug fires simultaneously inside and outside the shell, fuel mixture is ignited at the same time a powerful turbo wiping action, created by the piston stroke, burns and blows out the carbon. Power loss is prevented and you get greatly increased horsepower and gasoline mileage. In a series of road tests, some cars have shown 10 horsepower gain, mileage increase 15% and more.

PLEASE NOTE: The Life-Long spark plug is different in every way—not just an "improved" plug, but an entirely new engineering development!

LIFE-LONG

SPARK PLUG CORPORATION
140 Kansas Street, El Segundo, California

OIL INDUSTRY RESEARCH DISCOVERS AMAZING ELECTRODE SECRET

Research engineers of leading oil companies recently revealed that nickel-cadmium is the most perfect material yet developed for the electrodes of spark plugs designed for modern high-compression, internal combustion automobile engines. The nickel-cadmium solid electrode of the Life-Long Plug has ideal characteristics of extremely high conductivity and durability, being able to withstand temperatures of 3500° indefinitely.

BUILT-IN CADALLOY CATALYST

These same research engineers also discovered that a new alloy (which we call Cadalloy) introduced into the combustion chamber of a plug, acts as a catalyst to produce the most efficient fuel combustion. Life-Long Plugs are the first to use this important discovery!

ATTENTION, OWNERS OF 12-VOLT AUTOS. Conventional plugs, designed for 6-volt electrical systems, do not function well in modern 12-volt systems. Life-Long Plugs are designed to handle twice the voltage capacity of 6-volt systems. If your car has a 12-volt system, don't be misled—only Life-Long gives you full plug efficiency!

LIFE-LONG PLUGS ACTUALLY COST LESS! A set of Life-Long Nickel-Cadmium Plugs will outlast six or more sets of ordinary plugs. You end replacement costs completely. Yet the set of 6 Life-Long Plugs costs only \$8.95 each. Set of 8 only \$11.95.

ORDER REGISTERED SET FOR YOUR CAR NOW. Life-Long Nickel-Cadmium Spark Plugs come to you in a tamper-proof, laminated plastic container. Sealed at the factory, your Life-Long Plugs are not touched until you break the seal.



LIFE-LONG SPARK PLUG CORP., Dept. PS-26
140 Kansas Street, El Segundo, California

Please mail postpaid _____ registered sets of Life-Long Nickel-Cadmium Spark Plugs guaranteed to increase my car's mileage, speed and horsepower. (Set of 6, \$8.95; set of 8, \$11.95.)

Name _____
Street _____
City _____ Zone _____ State _____
Year of Car _____ Model of Car _____
Make of Car _____ No. of Cylinders _____
I enclose ☐ check ☐ cash ☐ money order

New positions now open:

TOOLING MEN: JOIN

the long-range production
and development program at
Lockheed in California

Forty-six major projects are in progress at Lockheed. Thirteen aircraft are already on assembly lines. It's the biggest production and development program in Lockheed's history — and it's expanding rapidly.

It has created new positions for:

TOOLING MEN

Tool Designers — with at least three years' major jig aircraft experience
Tool Planners — with at least four years' aircraft tool planning experience
Jig and Fixture Builders — with aircraft major jig experience
Tool and Die Makers • Plaster Pattern Makers • Template Makers

MACHINISTS

Duplicating and Profiling Machinists • General Machinists • Horizontal Boring Mill Machinists • Jig Borer Machinists • Milling Machine Machinists • Shaper Machinists • Turret Lathe Machinists

To qualify you need at least three years' journeyman experience in your field.

Lockheed offers Tooling Men:

Top pay • A wide range of extra employee benefits including an outstanding pension plan, free insurance, paid vacations and sick leave with pay • Liberal Travel and moving allowances.

Use coupon below to request job application blank and illustrated brochure describing life and work at Lockheed in California.

TOOLING MEN PROGRAM

Mr. E. W. Des Lauriers, Dept. T-26-2
Lockheed Aircraft Corporation
Burbank, California

Please send me a job application blank and brochure.

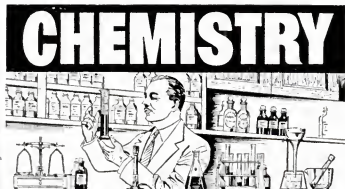
NAME _____

YOUR FIELD OF WORK _____

NUMBER OF YEARS' JOURNEYMAN EXPERIENCE _____

STREET ADDRESS _____

CITY AND STATE _____



BIG LABORATORY GIVEN FREE!

Be a **CHEMIST**! One of the really **GREAT** professions! We teach you at home. Simplified (but thorough) course; no previous training required. Earn while you learn. This is a **GOLDEN AGE** for those with special knowledge! Diploma awarded! Send 25c for first lesson and KIT or \$1.00 for first 5 lessons and supplies including

FREE! URANIUM TESTER, CHEMICAL PUZZLE (worth \$2.50) and HOW TO MAKE 100 NEW CHEMICALS!

NATIONAL SCHOOL OF CHEMISTRY

P. O. Box 606-B

Redwood City, Calif.

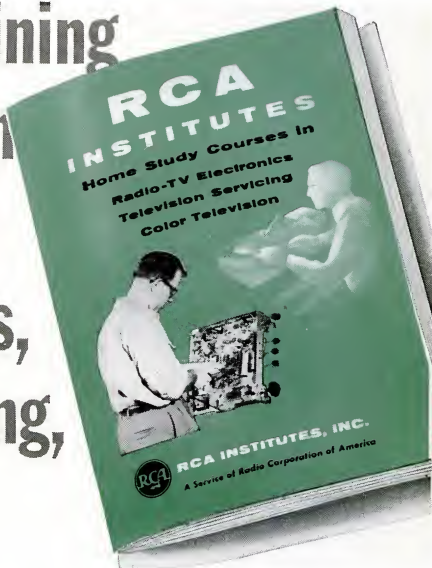
MONEY for MEN FREE
ALL DATA
THE PLASTEX Industry needs manufacturers on small scale and for big production of Lamp, Clock, Stands, Art Goods and Novelties in Plastex and Marble Imitation. Experience unnecessary. Age material makes regular 10c store sellers. Rubber moulds furnished for speed production. Small investment brings good returns. We are now placing big chain store orders with manufacturers. Ambitious men have chance for real prosperity. Our Free booklet will interest and benefit you.
PLASTEX INDUSTRIES, Dept. 2, 3400 Third Ave., New York 56, N. Y.

\$ GROW HERBS FOR US!
AT HOME — IN YOUR SPARE TIME
Help fill our huge demand — used in expensive medicines. Easy to grow indoors or out—multiply rapidly. Free around Profusion! You grow 'em—we buy 'em! We supply everything you need. Free rare seeds and revealing plan is yours free for the asking. Be one of the first to profit—your name and address to: **NATIONAL HERB EXCHANGE!**
Dept. B-7, 15125 So. Broadway, Gardena, Calif.

ELECTROPLATE
ANY OBJECT IN HOME SHOP, GARAGE OR START YOUR OWN WELL PAYING ELECTROPLATING BUSINESS
NOW, using NEW plating kit, it's easy to electroplate any object. Complete kit and instructions on plating metal and non-metal objects, with nickel, copper, chrome, gold, etc., plus full data on obtaining all the business you desire and make **BIG MONEY** full or spare time. **ONLY \$5.50. SEND NO MONEY**—everything sent **\$5.00**, plus postage and handling **95c** now and receive it postpaid. Money back in 7 days if not satisfied.
M. Z. SALES CO., Dept. PS-23, 113 W. 42 St., New York 36, N. Y.

FOR BIG MEN ONLY!
SIZES 10 to 16 AAA to EEE
We SPECIALIZE in large sizes only—sizes 10 to 16; widths AAA to EEE. Low Cut; Wing Tips; Hand-Sewn Moccasins; Cordovan; Dress Oxfords; Work Shoes; Sox; Slippers; Rubbers. Enjoy the finest in fit, comfort, style at amazingly low cost. And only... Write TODAY for **FREE Style Book!**
KING-SIZE, INC.
710 Brockton, Mass.

RCA offers you the
finest training
at home in
Radio-TV
electronics,
TV servicing,
Color TV



**SEND FOR THIS FREE
BOOK NOW!**

The instruction you receive and equipment you get (and keep) will start you on your way. Pay-as-you-learn. You pay for only one study group at a time. This 52 page book contains complete information on Home Study Courses for the beginner and the advanced student.



RCA INSTITUTES, INC.
A SERVICE OF RADIO CORPORATION OF AMERICA
350 WEST FOURTH STREET, NEW YORK 14, N.Y.

RCA Institutes, Inc., Home Study SP-62
350 West Fourth Street New York 14, N. Y.
Without obligation, send me FREE CATALOG
on Home Study Courses in Radio, Television
and Color TV. No salesman will call.

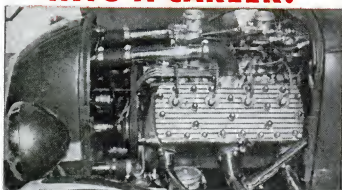
Name Please Print
Address
City Zone State

IMPORTANT
Be sure to write
for RCA Institutes
catalog before
signing up for any
Radio-TV course



IF YOU "EAT, SLEEP
AND LIVE" CARS...

TURN YOUR HOBBY INTO A CAREER!



Get America's Big-time, Big-future

AUTO MECHANICS & DIESEL COURSE at home in your spare time!

Los Angeles' National Schools, America's automotive Technical Trade School since 1905, now brings its famous resident Shops and Faculty direct to you at home—to prepare you to earn more money, with job security, in today's fast-moving, opportunity-filled Auto Mechanics Industry! Get your home training from the "Car Capital of the World"—America's most auto-minded city, center of Hot Rod and Sports Car activity! Mail coupon right now!

"SHOP-METHOD" HOME TRAINING!

YOU MASTER ALL PHASES, INCLUDING DIESEL! All lessons fully illustrated. Latest equipment covered.



THIS SET OF LIFETIME TOOLS IS YOURS! Also all-metal tool box. Part of your course, yours to keep. **EARN WHILE YOU LEARN!** We show you how to start Spare Time Earnings soon after enrollment.

ATTENTION MEN OF DRAFT AGE. Learn how you can achieve higher rating and pay. Mail coupon at once!

APPROVED FOR G. I. TRAINING. Both Home Study & Resident Courses. Free help with technical and personal problems—Job Placement Service.



**Send for FREE FACT-BOOK
AND SAMPLE LESSON!**

**NOW! 2 offices to serve you faster!
Mail coupon today to one nearest you!**

NATIONAL SCHOOLS

Technical Trade Training Since 1905

LOS ANGELES 37, CALIFORNIA

IN CANADA: 811 West Hastings Street, Vancouver, B. C.

MAIL NOW TO OFFICE NEAREST YOU!

(mail in envelope or paste on postal card)

NATIONAL SCHOOLS, Dept. DC 26

4000 S. FIGUEROA STREET
LOS ANGELES 37, CALIF.

OR 323 WEST POLK STREET
CHICAGO 7, ILLINOIS

Send FREE Auto-Mechanics Book and Sample Lesson. No obligation, no salesman will call.

NAME _____ BIRTHDAY _____ 19 ____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

☐ Check if Interested ONLY in Resident School Training at Los Angeles. VETERANS: Give Date of Discharge _____

**Earn \$217 a Month EXTRA
With My FREE
SHOE OUTFIT!**

**Just
2 Sales
a Day
Does It!**

Rush a postcard today for my powerful FREE Shoe Selling Outfit. It contains everything you need to start a steady profit, repeat-order shoe business! Just 2 sales a day earns you up to \$217 a month EXTRA! It's amazingly easy! Just show friends, relatives Mason's famous shoes with comfortable Air-Cushion insoles. People like buying the Mason way because they choose from over 180 dress, sport, work styles for men and women—including Nylon mesh, Cush-N-Crepe and Safety Toe work shoe styles. Because you draw from stock of 200,000 pairs in an amazing range of sizes and widths, customers get the exact size, width and style they order! Our shoes are not sold in stores... people must buy from YOU! Start making BIG MONEY now... send for your FREE Special Outfit TODAY!



**Write
TODAY!**

MASON SHOE MFG. CO.
DEPT. MA 958
CHIPPEWA FALLS, WIS.



GIANT BALLOONS 49c

They're really BIG—minus U.S. Govt. (new overage) Neoprene weather, target balloons. GREAT FUN in the backyard! at parties, picnics, dances, fairs. TERRIFIC for high school and college PROMS. They attract BIG CROWDS to business openings, civic events, conventions, exhibitions, trade shows. ORDER TODAY! Approx. inflated sizes:

18" dia., 3 for 70c
3 ft. dia., 49c—5 ft. dia., 99c
10 ft. dia., \$1.59—13 ft. dia., \$1.95

Postage paid on prepaid orders. Calif. residents please add sales tax on all items.

VOLUME SALES CO. WAR ASSETS DIV.
Dept. PS-256, 3930 Sunset Blvd., Los Angeles 29, Calif.



Print Your Own

Cards, Stationery, Advertising, labels, circulars, photo and movie titles, church work, tags, etc. Save money. Sold direct from factory only. Raised printing like engraving, too. **Print for Others, Good Profit.** Have a home print shop. Easy rules supplied. Pays for itself in a short time. Write for free catalog of outfits and all details.

KELSEY PRESSES, N-33, Meriden, Conn.

HOW TO BUY WHOLESALE

Start a buying service. Make up to \$10,000.00 the first year. No experience and little capital necessary. Buy New Nationally Advertised Merchandise Wholesale. Sell to others at fabulous profits. Save to 80% off on your personal purchases. Complete Satisfaction Guaranteed. "Free" details. Act Today!

WHOLESALE BUYERS' SERVICE

Box 22, Dept. 31

St. Louis 3, Missouri

AUTO EARN AS YOU LEARN AT HOME MECHANICS

BIG PAY! SEND FOR 2 NEW FREE BOOKS

Learn the No. 1 trade—get into America's largest industry. Earn up to \$125 a week and more. Enjoy security—thousands of mechanics needed to service 50 million cars and 10 million trucks. New CTI Home Training prepares you in just a few months. Tools and Tune-Up Kit sent. Write for FREE BOOKS.

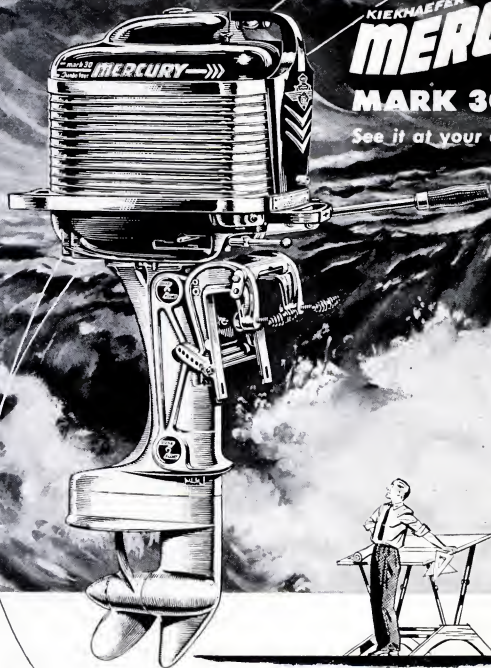
COMMERCIAL TRADES INSTITUTE Dept. A-208
1400 Greenleaf Avenue Chicago 26, Illinois

NEW! *the motor you asked for...*

KIEKHAEFER
MERCURY

MARK 30 turbo 4

See it at your dealer's now!



A 30 h.p. Alternate Four, weighing only 110 lbs. ... the exclusive Mercury carrying handles actually make it seem lighter ... available with 12-volt electric starter and generator ... all the quality Mercury features.

Proved by years of brutal field testing, backed by experience only Mercury has from building more than two million horsepower of famous 4 cylinder Thunderbolt engines! The finest, smoothest, most powerful engine in its class ... fully qualified to wear the Mercury trade mark.

MERCURY ... THE MOST POWERFUL NAME IN OUTBOARDS
REMEMBER ... A FOUR IS BOUND TO BE BETTER

6½ gal. remote fuel tank
standard equipment

MEN - WOMEN RAISE ORCHIDS

**IN YOUR
LIVING
ROOM!**

YEAR 'ROUND

No Equipment Needed

Any Climate, Maine to California

BIG PROFITS!

*Spare or Full Time, loads
of Fun for all the Family!*

Fill your home with gorgeous Tropical Orchids. Thrill to the gorgeous beauty of your very own huge purple Cattleyas like those you see in nearly every flower shop. Exquisite Cymbidiums, sometimes with 30 or more blooms on each stalk. Hundreds of others—many grow without soil, getting food from the air. Yellow Orchids, greens, blues, pinks, browns, every rainbow color. No greenhouse needed. Start on card table in your living room. Any climate, Maine to California.

Successful Home Grower SHOWS YOU HOW



LOUIS SCHIRMER Orchidist

Louis Schirmer, successful home grower, shows you step-by-step how he and Mrs. Schirmer started with a few plants at home, developed a big-profit business, and grew an Orchid collection now worth a fortune. Learn how Orchids multiply—how one plant may become many, each as valuable as the first. No big investment. No overhead. Takes few minutes a week. Big-profit orders come from individuals, florists, hotels, clubs, etc. Popular year-round gift. Millions sold by Mail-Order. Schirmer shows you how!



You can grow
gorgeous Cattleya Orchids
like this in your own home!

Home Growers Coast to Coast
Benefit from Schirmer's Help
A wonderful course, written
so anyone can understand it—
A. S. Schirmer
"I can get all the Orchids I can
produce!"
M. M. Lake

**Complete Instructions and Living
Orchid Plants Sent to You to
Examine at Home Without Risk**

Complete Directions—secrets of the experts—in simple language, jam-packed with "show-how" drawings, gorgeous full-size pictures of Orchids. Also real blooming-size Orchid plants from the Schirmer's own Gardens. Everything you need to start is yours to examine at home, without risk. **FREE**—Full details. Learn how you may become an Orchid Grower. Send no money! Write today. Airmail is quickest. . . .

TROPICAL FLOWERLAND DEPT. 22
4622 Wilshire, Los Angeles 5, Calif.

MAIL COUPON NOW!

Tropical Flowerland Dept. 22
4622 Wilshire, Los Angeles 5, Calif.

Rush me complete **Free** details on your offer of Louis Schirmer's Instructions which show me how to grow Tropical Orchids at home. The instructions will include a blooming-size Orchid Plant and valuable home Profit-Plan. This request does not obligate me in any way.

Name _____
Address _____
City _____ Zone _____ State _____

**Let me show you how I
made \$20,000 a year
buying junk jewelry**

Learn at home in one evening



No selling. Pay friends and neighbors good prices for old rings, watches, chains and bridges. U. S. Gov't pays you \$35 an ounce for the gold this junk contains.

THERE'S gold to be picked up on any street in any town any day of the year if you know my secrets. I teach you how to find it, how to buy it, what to pay for it, how to test and how to ship to Uncle Sam for cash. I supply you with testing outfit and weighing scale. Takes only one evening to learn at home. Next day you are ready to fill your pockets with gold at junk prices. I'll teach you the secrets by which I made \$20,000 a year. No charge for facts. Send name on postcard—No money. Leslie Patton, 335 W. Madison Street, Dept. 122, Chicago 6, Illinois.

BECOME AN EXPERT IN TRAFFIC

Traffic men earn \$4,000 to \$10,000 and up. Thousands of firms need experts on rates, tariffs, regulations. We train you thoroughly in spare time at home for executive traffic jobs. Personal training under traffic authorities. Placement counsel and help. Write for free 68-page book Traffic Management—the Fast Growing Profession.

LASALLE Extension University, 417 So. Dearborn St.
A Correspondence Institution Dept. 2837 Chicago 5, Ill.

Now you can learn how to make big money by casting thousands of perfect plaques, book ends, figurines, etc., with **CLAY RUBBER MOLD**. **NO EXPERIENCE. VERY LITTLE CAPITAL NEEDED.** X.L. Rubber, Pts. \$2.50; Qts. \$4.00 (postage extra). Molds and enough rubber for three molds. \$1.00 prepaid, U.S. only. Send this (refunded with order) for informative literature (60 pages) describing this wonderful, exciting Profit-making business.

HUGE PROFITS! MORE MONEY!

PLASTIC ARTS STUDIO 3403 S. MADISON, DEPT. 3
MUNCIE, INDIANA



SEND FOR THIS FREE!

Make money. Know how to break and train horses. **Write today for this book FREE**, together with special offer of a course in Animal Breeding. If you are interested in Galting and Riding the saddle horse, check here () *Do it today—now.*

BEERY SCHOOL OF HORSEMANSHIP
Dept. 582 Pleasant Hill, Ohio

High School at Home

MANY FINISH IN 2 YEARS

No classes. No time wasted going to and from school. Progress as fast as your time and abilities permit. Standard H. S. texts supplied. Thousands enroll each year in this year-old school. Send for **FREE** descriptive booklet.

AMERICAN SCHOOL, Dept. H-246
Drexel at 58th St., Chicago 37, Ill.

Without obligation, please send **FREE** descriptive booklet.

Name _____
Address _____
Canadian Residents: Complete Canadian Course Available.
Write American School, 1610 Sherbrooke St., West, Montreal.

Learn PRACTICAL RADIO-TV with 25 BIG KITS

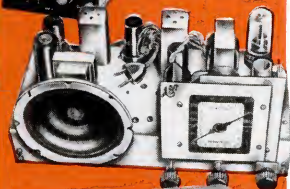
of equipment I send you while
you train with me... for valuable
shop bench experience...



The new Sprayberry Training
Television receiver, built
and tested in sections.

I now offer this fine modern
oscilloscope.

You build this powerful 2
Band superhet radio receiver.



You build the new
Sprayberry Tester... 18-range
Volt-Ohm-Milliammeter readings.

In addition to modern lesson training, I also give you
plenty of home practice on actual Radio-Television
equipment... you will build and use the units shown
here plus many more. All this equipment is yours to
keep... keep everything you need to set up your shop.

Prepare for a Good Paying Job—Or Your Own Business

"I Will Train You at Home in RADIO-TELEVISION on Liberal No Obligation Plan!"

New Equipment! New Lessons! Enlarged
Course! The true facts are yours in my
big new catalog... YOURS FREE...

JUST MAIL COUPON!



Frank L. Sprayberry
President, Sprayberry
Academy of Radio

I can train and prepare you in as little as
10 months to step into the big opportunity
Radio-Television service field. Train *without*
signing a binding contract... without obligat-
ing yourself to pay any regular monthly
amounts. You train entirely at home in spare
hours... you train as fast or as slowly as
you wish. You'll have your choice of THREE SPRAYBERRY TRAINING
PLANS... planned for both beginners as well as the more experienced
man. Get the true facts about the finest most modern Radio-Training avail-
able today... just mail the coupon for my big new 56 page fact-filled
catalog plus sample lesson—both FREE.

Train the Practical Way—with Actual Radio-Television Equipment

My students do better because I train both the mind and the hands. Sprayberry
Training is offered in 25 individual training units, each includes a practice giving
kit of parts and equipment... all yours to keep. You will gain priceless practical
experience building the specially engineered Sprayberry Television Training Re-
ceiver, Two-Band Radio Set, Signal Generator, Audio Tester and the new Spray-
berry 18 range Multi-Tester, plus other test units. You will have a complete set
of Radio-TV test equipment to start your own shop. My lessons are regularly
revised and every important new development is covered. My students are com-
pletely trained Radio-Television Service Technicians.

NEWEST DEVELOPMENTS

Your training
covers U H F, Color
Television, F.M.,
Oscilloscope
Servicing, High
Fidelity Sound
and Transistors.

See for Yourself... Make Your Own Decision ... Mail Coupon Today!

The coupon below brings you my big new catalog plus
an actual sample Sprayberry Lesson. I invite you to read
the facts... to see that I actually illustrate every item
I include in my training. With the facts in your hands,
you will be able to decide. *No salesman will call on you.*
The coupon places you under no obligation. Mail it now,
today, and get ready for your place in Radio-Television.

SPRAYBERRY ACADEMY OF RADIO

111 North Canal Street, Dept. 55-H, Chicago 6, Illinois

Mail This Coupon For Free Facts and Sample Lesson



SPRAYBERRY ACADEMY OF RADIO
Dept. 55-H, 111 N. Canal St., Chicago 6, Ill.

Please rush all information on your ALL-NEW Radio-Television
Training Plan. I understand this does not obligate me
and that no salesman will call upon me. Include New Catalog
and Sample Lesson FREE.

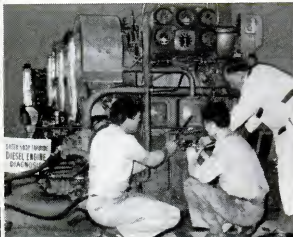
Name _____ Age _____

Address _____

City _____ Zone _____ State _____

DIESEL

MECHANICS IN DEMAND



Learn to earn big pay in DIESEL in our large, modern equipped Chicago school and shop. No previous experience or training necessary. We help you find living quarters and part time job while in school.

Complete, practical courses taught in the following trades, under the supervision of experienced, expert technicians.

APPROVED FOR CIVILIANS ☐ OR GI'S ☐

—CHOOSE YOUR TRADE—

CHECK HERE	WEEDS
<input type="checkbox"/> DIESEL MECHANICS	20
<input type="checkbox"/> AUTO MECHANICS	20
<input type="checkbox"/> BODY & FENDER	162 3/4
<input type="checkbox"/> GAS-ARC WELDING	4-12
<input type="checkbox"/> REFRIGERATION	13 1/2
<input type="checkbox"/> AIR CONDITIONING	8 1/3
<input type="checkbox"/> MACHINIST TRADE	30
<input type="checkbox"/> ADVANCED MACHINIST (includes tool & die)	32 1/2
<input type="checkbox"/> PIANO TUNING & REPAIR 36	

CHOOSE YOUR ENGINEERING COURSE

These courses are intended as terminal education for men who wish to enter the Diesel-Automotive and Refrigeration-Air Conditioning fields as technicians. These courses are designed to prepare men for supervisory positions. Students with a high school education, or equivalent, will be accepted.

<input type="checkbox"/> DIESEL AUTOMOTIVE ENGINEERING	2 years
<input type="checkbox"/> REFRIGERATION & AIR COND. ENGINEERING	18 months

FREE EMPLOYMENT HELP

Start your career with Greer by checking your interest above, and mail coupon for complete information at no obligation.

NAME _____ AGE _____

STREET _____

TOWN _____ ZONE _____ STATE _____

Established 1902—Over 50,000 Graduates

54 years of continuous trade school experience to guide your training.

GREER TRAINING

Box B, 2238 S. Michigan Ave.
Chicago 16, Illinois



INSURED TIRE SERVICE POPULAR BRANDS

FREE

INSURANCE POLICY given with each used tire sold. We guarantee the amount of service you pay for. NOWHERE CAN SUCH QUALITY BE FOUND AT SUCH LOW PRICE!

SPECIAL! 10% off orders for more used tires.

YOU CAN'T LOSE!!

GOODYEAR SUBURBANITE TYPE SNOW TIRES

New Tire Guarantee—Factory Rebuilt

BEST WINTER TRACTION OF ALL!

670x15	\$9.95	710x15	\$50x15	\$10.90
600x15		760x15	650x15	

Super Quality — Rugged Performance — 15 Months				Insured Service	
600x16	\$3.65	670x15	\$3.95	700x16	\$4.45
650x15	3.85	670x16	4.05	710x15	4.35
650x16	4.25	700x15	3.95	760x15	4.45
				820x15	4.95
				850x17	4.65

Supreme Quality	Nothing Finer	30 Months Insured Service
600x15 \$5.25 25x75x15	\$5.45 500x15(6)	\$6.00 700x20
600x15(6) 6.75 640x15	4.95 500x15(6)	15.95 750x20(8)
650x15 5.75 670x15	5.35 500x15(6)	11.95 750x20(10)
650x15(6) 7.25 710x15	5.45 500x17	11.95 825x20
700x15 6.35 760x15	5.95 750x15	10.95 900x20
750x15(6) 8.45 800x15	6.35 90x15	11.25 100x20
850x15 4.95 820x15	6.35 600x20	10.95 1100x20
850x17 4.75 900x20	11.75 1000x22	21.95
900x15 5.25 970x15	11.35 1200x22	21.75
950x15 5.35 1000x16(6)	10.25 250x26(10)	12.75 1100x24
		25.95

Whitewalls \$1.00 extra.

MIDLAND TIRE SALES

Speedy shipments on Mail Orders. F.O.B. Chicago. Insurance policy sent with each order. Decade. Insurance policy sent with each order. Decade. Send CHECK or MONEY ORDER. —NO C.O.D.'s.

3701 S. Normal, Dept. 55-40, Chicago 9, Ill.

TELEPHONES



Desk Stand Style

Slightly used but in excellent condition

Many Valuable Uses

Inter-House Phones House to Barn, etc.
Loud Speakers Microphones
Educational Purposes, Toys, etc.

Comes complete, ready to use with wiring diagrams included. \$2.75 Postpaid In U.S.A.

Two complete for only \$5.00. TELEPHONE LAMP KIT—with illustrated instructions for making Desk Telephone Lamp including all parts (bells, nipples, push switch, cord, plug, etc.). \$6.50 Ppd. (Rhode is not included).

MICROPHONE, Dept. X-3104, 1760 W. Lunt Ave., Chicago 26, Ill

RUPTURED

BE FREE FROM TRUSS SLAVERY

NOW there is a new modern Non-Surgical treatment that permanently corrects rupture. These Non-Surgical treatments are so certain, that a Lifetime Certificate of Assurance is given. Write today for our FREE Book that gives facts that may save you painful and expensive surgery, and tells how non-surgically you may again work, live, play and love and enjoy life in the manner you desire. There is no obligation. Excelsior Hernia Clinic Dept. 3765 Excelsior Springs, Mo.

Watch Repairing Pays Big Money Learn at home



Watch repairers in great demand. Train step-by-step in 10 easy lessons. We furnish all tools and 15 jewel watch and practice movement. Turn spare time into cash. Licensed school. Low cost. Send for FREE book today.

ILLINOIS SCHOOL OF WATCH REPAIRING

2870 Elston Ave., Dept. PS-26, Chicago 18, Ill.

Better Than
Your Own

SHOE STORE AT HOME

No investment, no experience needed. Just show magic cushion comfort to friends, neighbors, co-workers. Advance commissions to \$4.00 a pair, plus Cash Bonus, Paid Vacation, \$25.00 Reward Offer. Outstanding values for men, women, children. Money back guarantee. Shoe samples supplied without cost. Write TODAY for FREE new 84 page catalog and full details.

TANNERS SHOE CO., 687 BROCKTON, MASS.



Two-Eyelet
Hit With
Cushioned
Comfort

BARGAINS

IS THE ONLY BIG TABLOID PUBLICATION in
Existence That Tells You WHERE & HOW
—EVERY MONTH—



- To Buy Bankrupt, Closeout, Surplus Bargains!
- To Buy Items at Wholesale! ● At Below Wholesale!
- To Buy Many New & Unusual Items!
- To Obtain Information on
Rare Money Making Offers!

TOYS, BOOKS, JEWELRY, GREETING CARDS,
COSMETICS, HOUSEHOLD MERCHANDISE,
APPLIANCES, INDUSTRIAL MATERIALS,
MACHINERY, TOOLS, ETC.

Often as Low as 10c-25c on the Retail Dollar!!

ONE issue of this Sensational NEW publication can save you MORE MONEY than the cost of the entire subscription! You can BUY BETTER, CHEAPER, NEVER THINGS EVERY MONTH OF THE YEAR! Today, when your dollar buys so little, you absolutely need every single issue of BARGAINS in order to get the MOST FROM EVERY PENNY YOU SPEND. Each issue carries HUNDREDS of bargain offers... many times 80 EXTRAORDINARY that it's hard to believe that there's GENUINE Buying at WHOLESALE, BANKRUPT, SURPLUS, CLOSEOUT PRICES can save you from 40 to 80c or more on every dollar you spend! THIS MAY BE HARD TO BELIEVE, BUT IT IS THE TRUTH!

**YOU Can make FANTASTIC PROFITS Buying Up Bargain
Merchandise CHEAP and Selling It CHEAP**

Thousands of Agents, Salesmen, Dealers are subscribers to "BARGAINS". They want to know where to buy BEST in order to sell at low prices for BIG PROFITS. NO REASON why you CAN'T DO THE SAME! Special articles in BARGAINS give you valuable tips on HOW to sell these bargains for BIG PROFITS. And you know, EVERYBODY is looking for bargains these days... In fact, this is the only kind of merchandise that is being sold in tremendous volume. Ask any big businessman!

Unique "Subscribers Shopping Service" Enables You to Buy Big Name Merchandise at TREMENDOUS SAVINGS

You won't find this feature in ANY OTHER MAGAZINE. ONLY "BARGAINS" has it. For subscribers ONLY, each month it negotiates bargain offers in famous merchandise at LOW WHOLESALE PRICES and then offers them to subscribers AT NO PROFIT! Enables you to buy in small lots—single or in quantity at the same prices (sometimes even lower) than dealers are paying! THIS SINGLE FEATURE OF BARGAINS IS WORTH THE LOW SUBSCRIPTION PRICE A DOZEN TIMES OVER. Yet, it's only ONE feature among many to be proud! Yes, just one.

"Bargains" IS THE ONLY Publication of Its Kind in Existence!

Search your newstands high and low. You won't find another publication like it! BARGAINS is available by subscription ONLY. Read the glowing letters by subscribers who received their first copies and WERE AMAZED by this sensational publication! You will be, too!

SAVE UP TO \$1,000—EARN UP TO \$3,000

We honestly believe that it's possible to SAVE up to \$1,000—and EARN UP TO \$3,000 within a year by reading "BARGAINS" EVERY MONTH! WHY NOT PROVE THIS FOR YOURSELF?

Your subscription will automatically include the BIG 1956 "CHRISTMAS SPECIAL" issue—jam full of terrific, eye opening holiday BARGAINS! JUST \$2.00—17c per month gives you 12 great money saving issues of BARGAINS!

\$2.00 Per Year—12 Big Issues

(Regular price, \$3.00 per Year)

**Special Limited Time Offer
to Get 10,000 New Subscribers!**

Your Money Back IN FULL

if the First Issue Doesn't Please You!

LET'S FACE IT... Claims, promises are easily made on paper. You may or may not believe all we say here. BUT can you go wrong in subscribing to "Bargains" on this iron-clad MONEY BACK GUARANTEE... Your money back IN FULL if the first issue that you receive doesn't please you! Can any offer be more POSITIVE, more FAIR than this POWERFUL guarantee?

Tower Press, Inc., P. O. Box 591-SM, Lynn, Mass.

Here's a FEW Samples of the
Bargains Usually Found in
"BARGAINS"!

- PENCILS, 57½¢ per Grass!
- 25¢ Rudolph the Reindeer Brooches, 2¢ each!
- Plastic Toy GUNS, 2¢ each!
- \$1. Mufflers, Scarfs, 12½¢ each!
- Double edge razor blades, \$1.50 per 1000!
- LADIES APRONS, 6¼¢ each!
- \$2.50 WALLETs, 30¢ each!
- \$1. val. BILLFOLDS, 15¢ each!
- \$1. Kiddies handbags, 3¢ each!
- CIGARETTE HOLDERS, 1¢ each!
- BUTTONS, 14¢ for 25¢!
- NEW Phono records, 78 & 45 r.p.m., 7¢ each!
- 69¢ Insect Repellent, 5¢ each!
- New 20" T.V. Pic. tubes, \$21.95 each!
- Famous brand \$18.75 perfume, \$1. each!
- 49¢ Xmas window decorations, 10¢ per set!
- \$1.53 Hard cover books, 20¢ each!
- \$200.00 Surplus typewriters, \$23.00 each!
- 50¢ Everyday greeting cards, 7¢ per box!
- \$1.95 Men's Silk Ties, 12½¢ each!
- \$1. val. personal cloth name tapes, 40¢ for 72!
- 39¢ Under arm deodorant, 2¢ jar!
- \$1. Automatic card shufflers, 9¢ each!
- NEW HAIRNETS, ½¢ each!
- \$15.00 Electric Percutators, \$5.00 each!
- \$1.75 Rudolph Reindeer kiddies Tallyho sets, 35¢ each!
- \$5.50 Lucite Hairbrushes, 65¢ each!
- New Bobbin Pins, 70¢ per 1000 pins!
- \$10. Men's Tallyho Sets, 60¢ each!
- Calendar Wrist Watches, 55¢ each!
- Christmas Seals, 25¢ per 1000!
- \$2.98 Horse race game records, 30¢ each!

**PLUS HUNDREDS OF OTHER
SENSATIONAL BUYS!**

(Above list merely illustrates type of bargains usually found in this paper. Lists naturally change from month to month.) Price rates based on quantity buys.

**DON'T Take Our
Word for it—Here's
What Subscribers Say
About "BARGAINS"!**

"... Received my 1st issue and may I say IT IS A GREAT MAGAZINE."—M. C., Ark.

"... I am very pleased with BARGAINS. I have never seen anything like it!"—Mrs. D. M., Maine.

"... Just received my 1st copy of "Bargains" and believe me, it is all that you claimed it to be."—T. A., N. Y.

"... I was the recipient of my 1st copy a few days ago. I am completely satisfied with the periodical. I also wish to express my appreciation to you for having made the magazine available to me. I shall be pleased to continue my subscription as long as the magazine is available."—W. S., Wash.

Every One of THESE
LETTERS ARE IN OUR
FILES & WERE NOT
SOLICITED IN ANY WAY
OR MANNER!

—"Tear out Coupon. Mail NOW—at once!"—

Tower Press, Inc., P. O. Box 591-SM, Lynn, Mass.
O.K. Here's my \$2.00 for 1 year subscription. Rush me 1st copy!

Name.....

Address.....

City.....State.....

Remember! Your Money Back IN FULL if the 1st issue you receive doesn't please you!

FREE IMPORT BY RETURN MAIL!



To demonstrate your big money-making possibilities on my proved, successful import plan, I'll send you, without a penny's cost, a fisherman's hand-tied trout, crappie and blue gill casting fly. It costs just over a penny abroad, and sells by mail order or through stores in the U.S. for up to 30c. Think of it! Over 1500% mark-up. And there are more than 19 MILLION FISHERMEN IN THE U.S.—a huge and free-spending market.

GENUINE COACHMAN, HAND-TIED CASTING FLY YOURS FREE

And this is only one example of the foreign imports with fabulous profit opportunities for men and women. There are more than 25 Million amateur photographers interested in cameras, filters, lenses, enlargers, etc. Millions of foreign made watches, clocks and jewelry items are bought in the U.S. The overseas made gift market runs into millions of dollars. There are more than 16 Million hunters interested in guns, binoculars, knives and other accessories you can import. And consider the 30 to 40 Million homemakers interested in electric sewing machines, scissors, yarns, etc. Other markets too numerous to mention await exploitation. Little wonder that World Traders make tremendous profits on low cost, high quality products. Now you too may enter this richly rewarding business with my personal guidance and help. I show you how and exactly where to get big profit imports.

GET CASH-IN-ADVANCE MAIL ORDERS

Receive orders with cash enclosed. Pocket your big profits in advance and pay traders abroad with the balance to ship direct to your customers. No face to face selling. No stocks to carry. Or if you like to make personal contact with buyers, then import directly for department, sporting goods, camera and gift stores, etc.—without capital.

YOUR OWN BUSINESS FULL OR PART TIME

Never, to my knowledge, has there been such a fine opportunity to operate your own business without previous experience, spare or full time, from your own home; or travel abroad. There are also tremendous opportunities in export which you may handle.

ACT NOW—ALL 3 FREE!

Mail coupon below for FREE Imported casting fly—plus new book, "Success Stories in World Trade" AND full details. (Only one free import to a person.) All 3 Mail reaches me overnight. B. L. Mellinger, The Mellinger Co., Dept. F242, 1717 Westwood Blvd., Los Angeles 24, Calif.

MAIL THIS COUPON TODAY

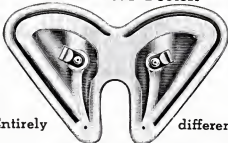
B. L. Mellinger, The Mellinger Co., Dept. F242, 1717 Westwood Blvd., Los Angeles 24, Calif.

Send me, without obligation, full details about the Mellinger World Trade Plan, your new book, "Success Stories in World Trade" and imported casting fly (only one to a person—none without coupon).

Name _____ Age _____
Address _____
City & Zone _____ State _____

If Ruptured

For lasting relief your rupture must
BE HELD BACK DAY and NIGHT.
Consult Your Doctor.



Entirely

different

SOFT, FLEXIBLE, and fits neat as a glove. The famous Miller saves you **TIME, MONEY, DISAPPOINTMENT.** Write for my **FREE** booklet today.

FRED B. MILLER Manufacturer
Dept. P-A Hagerstown, Maryland

60 POWER TELESCOPE \$3.98

VARIABLE EYEPiece 20X-40X-60X—BRASS BOUND

NEW! Three telescopes in one, 3 different magnifications, 20 power for ultra-bright images with 40 and 60 power for extra long range. Guaranteed to bring distant objects, people, sports events—ships, moon, stars, etc. 60 times as powerful for anywhere near the money. 8 sections. Closes to 1 ft. long. Contains 4 ground and polished lenses. Also used as a powerful compound microscope. Directions included. Mass production enables us to offer this instrument at amazing price of \$3.98 net. Moneyback guarantee. We pay postage. Get yours today.

Criterion Co., 331 Church St., Hartford, Conn., Dept. FS533

NEW ADVERTISING MACHINE

Prints & Illustrates Postal Cards

Learn how businesses are now boosting sales in spite of conditions—with ad messages—printed on government postals with amazing new patented **CARDMASTER**. Guarantees five years. Low price—sold direct. SEND NAME for FREE illustrated book of money-making ideas and complete unique advertising plans. Send your name today to **CARDMASTER CO., 1920 Sunnyside Avenue, Dept. 132, Chicago 40, Ill.**



WHOLESALE!

NATIONALLY FAMOUS Power tools, appliances, typewriters, watches, diamond rings, jewelry, tape recorders, musical instruments, phonographs, guns, cameras, shavers, sewing machines, etc. Big illustrated color catalog! Earn big profits! Details about unique self-operating sales plan included.

**30 to 80%
DISCOUNTS!**

CONSOLIDATED DISTRIBUTORS

21-06 LAFAYETTE, PATERSON 23, NEW JERSEY

Happy Is The Day When Backache Goes Away

Nagging backache, headache, or muscular aches and pains may come on with over-exertion, emotional upsets or day to day stress and strain. And folks who eat and drink unwisely sometimes suffer mild bladder irritation...with that restless, uncomfortable feeling.

If you are miserable and worn out because of these discomforts, Doan's Pills often help by their pain relieving action, by their soothing effect to ease bladder irritation, and by their mild diuretic action through the kidneys—tending to increase the output of the 15 miles of kidney tubes.

So if nagging backache makes you feel dragged-out, miserable...with restless, sleepless nights...don't wait...try Doan's Pills...get the same happy relief millions have enjoyed for over 60 years. Get Doan's Pills today!

FIX ANY CAR ON THE ROAD TODAY!

Here's How!

NOW! Even beginners can handle practically ANY job on ANY make, model or part!

TUNE UP, PEP UP, fix up ANY automobile . . . even if you've never repaired a car before!

Handle practically any job "slick as a whistle."

A tune up? New rings? Ignition or carburetor troubles? Brake or clutch problems? A valve job? Something wrong with power steering or one of those tricky new automatic transmissions?

Just look up the job you want to do!

This giant, 4 1/4 pound CHILTON REPAIR MANUAL tells what to do. Then it shows you step by step just how to do it. No guess work. No lost time. You handle auto repairs easier, faster and better than you may have dreamed.

There's a "secret" to easy auto service and this giant manual is it!

YOU WON'T MISS
with how-to-fix-it data like this to guide you!

Chilton covers practically every part of every car on the road today. Gives complete service details on every model of the leading 22 car makes from June 1940 to the present. Over 600 models in all!

Tells how to locate troubles. Shows what work-saving shortcuts to take . . . what adjustments to make . . . what parts to use . . . what mistakes to avoid . . . even what tools to use.

"Minor" details, often so puzzling to beginners, are fully explained.

From beginning to end, it's an honest-to-goodness HOW-TO-FIX-IT guide. NOT a "study" book. You use it right at the bench when you've got a car to fix!

Use the CHILTON MANUAL 10 days . . . FREE. If it's not all you expect . . . and more . . . return it AND DON'T OWE US A PENNY! Send coupons today to: Chilton Co., Dept. PS-26, 56th & Chestnut Sts., Philadelphia 39, Pa.

PRACTICE 10 DAYS FREE!

THE CHILTON CO., Dept. PS-26
5605 Chestnut St., Philadelphia 39, Pa.

Send me the giant new CHILTON "ALL CARS" REPAIR MANUAL (Price \$6.95) for 10-day FREE EXAMINATION. If I like Manual, I will then promptly remit \$1.95 (plus 45¢ postage and handling); then send \$2.50 each month for two months. Otherwise, I will return manual postpaid in 10 days and owe you nothing. **SAVE!** Send \$6.95 with order and we pay postage-handling charge. Same return privilege.

Name

Address

City, Zone, State

(OUTSIDE U.S.A.—Price \$8.95 cash with order. 10-day return privilege with money refunded.)

GIANT NEW ENLARGED 1956 EDITION

BY CHILTON, WORLD'S LARGEST
AUTOMOTIVE PUBLISHERS

- Over 850 Big Pages
- Weighs 4 1/4 pounds
- Almost 3,000 clear pictures
- 58 Troubleshooting Charts
- 353 Quick Check Data Tables
- Thousands upon thousands of parts and service specifications
- The original book of its kind . . . and still the best! Published for 72 years.

Covers Every Model of These 22 Makes Since 1940:

BUICK	FORD	OLDSMOBILE
CADILLAC	FRAZER	PACKARD
CHEVROLET	HENRY J.	PLYMOUTH
CHRYSLER	HUDSON	PONTIAC
CONTINENTAL	KAISER	RAMBLER
DE SOTO	LINCOLN	STUDEBAKER
DODGE	MERCURY	NASH
		WILLYS

Read What These Users Say!

EASY! "The Chilton how-to-do-it pictures are worth the entire price of the Manual!"

MELVIN WADE, Penna.

FAST! "Thanks to my Chilton Manual, I did a job in an hour another mechanic had worked on all day!"

GENE ARNOLD, Iowa

(CHILTON BOOKS ARE SOLD BY LEADING BOOK STORES)



1 I SHOW YOU HOW TO **MAKE MONEY** AT ONCE

2 START YOUR OWN BUSINESS

IN 2 WEEKS—
AT HOME
IN SPARE TIME



**PLATE
Baby Shoes
IN
BRONZE
AND
COLORED
PEARL**

**MILLIONS OF
NEW PROSPECTS
EVERY YEAR**



Now is the time to cash in on this big-paying, easy-to-operate, year-round business and you need no experience. **MATERIALS COST YOU ONLY 50c—YOU GET \$6.00!** With many actual "show-how" illustrations and step-by-step instructions, **YOU** can start earning money at once in one week. Working only a few hours you can make more money than many people make working an entire week.

IMMEDIATE RESULTS

- Big Income
- Huge Demand
- Sales Plan
- Future Security
- Your Own Business

We will send you full details absolutely free.

FREE!

**MONEY
MAKING
PLAN**

Full Details
Without
Obligation

**MAIL COUPON
TODAY!**

KIKTAVI COMPANY, Dept. S-562
11029 S. Vermont, Los Angeles 44, Calif.

KIKTAVI COMPANY, Dept. S-562

11029 S. Vermont, Los Angeles 44, Calif.

Send me FREE details of your **MONEY MAKING PLAN**, without obligation.

NAME _____

STREET _____

CITY _____ ZONE _____ STATE _____

REPAIR ANY WATCH



... Swiss or American

No previous experience needed to learn modern watch repair. An enjoyable hobby or profitable career. Unique Sweazey System starts you making repairs right away. Develops your skill step by step. Teaches you modern shop methods... professional short cuts... mistakes to avoid. Learn by personal attendance or spare time home study. Individual training. Start any time. Free sample lesson. No obligation. Write today!

CHICAGO SCHOOL OF WATCHMAKING

2330 N. Milwaukee, Dept. 426, Chicago 47, Illinois
Founded 1908 • Approved for veterans

SHINE WITHOUT 'POLISH'

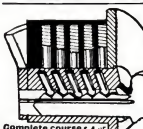


Cars Glean Like Mirror

Amazing "Dry" Polisher puts mirror-like shine on car WITHOUT 'POLISH'. No messy paste. No splashing. Simply glide over car. PRESTO! Leaves hard, lustrous, long-lasting protective Wax Coating. Take orders! Earn money!

SAMPLES FOR TRIAL

Sample offer sent immediately to all who send name at once. Just a postcard will do. SEND NO MONEY—just your name. KRISTEE CO., Dept. 702, Akron 8, Ohio



Locksmithing AND KEY MAKING

Now Made Easy! Practical up-to-date course

teaches you how to pick locks, de-code, make master keys, repair, install, service, etc. New self-instruction lesson for every handyman, homeowner, carpenter, mechanic, service station operator, fix-it shop, hardware dealer, gunsmith, 68 easy illustrated lessons. Full price only \$4.95, postpaid, or C.O.D. plus postage. Satisfaction or refund guaranteed.

Complete course \$4.95

... now only \$4.95

Nelson-Hall Co., Dept. BU-1

210 S. Clinton St., Chicago 6, Ill.

CABINET MAKING



LOW COST HOME TRAINING COURSE FOR BEGINNERS & ADVANCED CRAFTSMEN

Make money. Learn skills and secrets of fine woodworking and tool use. Professionally prepared shop method training tells and shows how. Covers everything. Easy to master.

INTERSTATE TRAINING SERVICE

Write for Free Booklet

DEPT. F2, PORTLAND 13, OREGON

EARN \$1000 MONTH

TOOL AND DIE DESIGNERS ARE IN DEMAND—and Acme is the only school in America offering complete tool and die design training—Acme graduates step right into responsible, high-paying positions! NOW you can take the same course taught in our resident schools by CORRESPONDENCE in your spare time. Training made sure and easy through our famous Cope System. If you can finish high school, you can master this profession! Prepare for a career in an \$8000-\$15000 yearly salary bracket—write today to ACME SCHOOL OF DIE DESIGN, Correspondence Div. S. B. N. Jefferson St., Dayton 2, Ohio. Approved under PL550 for Korean Veterans training.

JACKET EMBLEMS

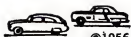
LADY LUCK 1-Shirts (specify size) 1.50
4" Felt Emblems ... 25 Decals available in same
7" Felt Emblems ... 50 sizes at the same price.
10" Felt Emblems ... 1.00 Specify when ordering.

PERSONAL NAME EMBLEMS
And embroidered on Superior White Turtl
Take Advantage of Quantity Orders
Four Color ... 25¢ 5 of any 1 name ... \$1.00

SEND NOW
for NEW completely
illustrated catalog
Emblems,
novelties and
accessories
only .25¢

SPOT ENTERPRISES

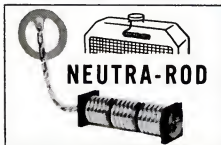
P.O. Box 66
Culver City 2, Calif.



©1956

New
Products

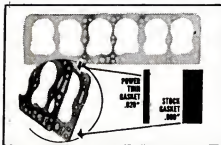
MAIL MART



NEW RADIATOR PROTECTOR. Neutra-Rod cleans engine cooling system and keeps it clean. Magnesium-copper disc neutralizer removes rust and scale that solvents and flushing can't touch. Eliminates "hot spots" and overheating. Also STOPS electrolytic action that causes costly radiator damage. Fits all cars. Only \$1.95. Item 1. Ppd.



MICRO-LOK SPINDLE NUTS hold front wheels perfectly in line. 62-point metric head—10 times as accurate as ordinary spindle nuts. That means TIRES GO STRAIGHT . . . Get up to 6,000 miles extra wear. It means safer steering . . . saves brakes and bearings. Insist on Micro-Lok. Made of tough, hardened steel. Only \$2.95 per car. Item 4. Ppd.

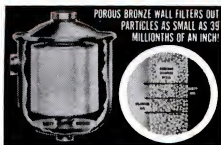


POWER-THIN COPPER GASKETS increase engine HP nearly 20%! Get better acceleration, cruising, mileage. Same as milling down cylinder head .060". Boosts compression up to 17%. Guaranteed not to blow out. 4 and 6-cylinder engines. \$4.95; 1932-53 Ford V-8 & Mercury, pair \$6.45. All other V-8's, pair \$7.95. All straight 8's, \$7.95. Item 7. Ppd.

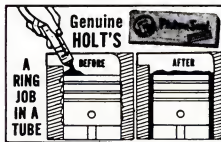
FREE CATALOG!

Contains thousands of speed, power, economy products — many not yet available in stores. Sent free with order. (Otherwise, send 25¢ for postage, handling.) Get yours today.

DEALERS! Help meet demand in your area. Write on your letterhead for new wholesale catalog.



PERMA-BRONZE OIL FILTER. You can't buy better—why pay more? NEVER needs replacing. Easy to clean. Transfer from one car to the next. Guaranteed for 10 years. Doubles mileage between oil changes. Acid neutralizer included. "By-pass" filter element, \$4.95. "Full flow" filter element, \$8.95. Complete "By-pass" filter with housing, \$10.95. Item 2. Ppd.



RE-VITALIZES "TIRED" ENGINES. Holt's Piston Seal restores NEW LIFE. NEW POWER to a sluggish engine! Unscrew spark plugs, squeeze Holt's into holes. Engine heat forms self-expanding seal . . . boosts compression, cuts oil guzzling like magic. Ends piston slap. Insist on genuine Holt's. Insured by Lloyd's of London. \$4.95. Item 5. Ppd.



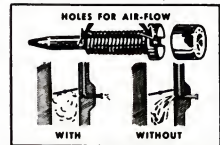
FLASH! LICENSE PLATE SIZE CHANGES. 42 states now conform to standard size! Personalized License Frames fit your new '56 plates—add neat, personal touch . . . your name, city or firm name. Distinctive gleaming one-piece chrome frame. Up to 12 thick, die-cast chrome letters. Specify lettering. \$1.65 plus 10¢ per letter. Item 8. Ppd.



STOP THOSE TWO CAR THIEVES . . . engine acid and abrasive metal grit! **NEUTRA-PLUG** has active magnesium element to neutralize corrosive acids . . . PLUS powerful Alnico magnet to capture abrasive particles. Replaces stock crankcase drain plug. Standard model, \$1.95. **DELUXE** (double-sized element on 200-lb. cable), \$2.45. Item 3. Ppd.



HANDY TO HAVE! 10-piece socket set containing most wanted auto and shop tools. Eight sockets, from 3/8" to 1 1/8" by 32's, plus ball-grip flex handle and extension. The size you need when you need it! Carry in your car for any emergency . . . comes in sturdy carrying case. Complete 10-piece tool set, amazing bargain at only \$1.95. Item 6. Ppd.



GANE AIR-JET NEEDLE increases gas mileage 2 to 4 (or more) MPG! Assures proper gas-air mixture at all speeds—prevents raw gas from pouring into carburetor. Gives smoother idle. Try it for 10 days—money back if not delighted. Replaces stock idling screw. Specify make of carburetor (dual throat takes 2). \$1.50 each. Item 9. Ppd.



5805 E. Beverly Blvd., Dept. 470
Los Angeles 22, Calif.

My car is _____ Year _____ Model _____
Name _____
Address _____
City _____ Zone _____ State _____

ORDER BY MAIL TODAY! Satisfaction guaranteed or money back! Send currency, check or money order and we pay postage. 20% deposit required on C.O.D.'s (No C.O.D. outside U.S.A.). California residents add 3% Tax.

Rush items circled:
1 2 3 4 5 6 7 8 9
(Full Price Enclosed) \$ _____
20% Deposit.
Send C.O.D. \$ _____

NEW INVENTION **REPLATES** by **ELECTROPLATING** RESTORES HOME, AUTO METALS **CHROME-SILVER-GOLD!**

NEW BRILLIANCE WITH SAME PROCESS AS PROFESSIONAL PLATERS
SILVER-CHROME-GOLD, ETC.



REPLATED. Quickly, Easily Now—with an amazing new invention, **APPL-L-COTE**, you plate hundreds of items, using the safe, safe current of 5 flashlight batteries in its handle. **ALL YOU DO** is simply hold disk on Applicator to metal, dip brush into solution, and plate as you brush. It's Easy, Quick, Genuine plating.

RESTORES METALS LIKE NEW Replaces Silver, Chrome, Nickel, Steel, Gold and Brass—all worn Spots, Stains, "Blisters," Silverware, Trunks, Rims of Holloware and other items can look like new again with this exclusive Electroplating process. Restore all your valuable Gold jewelry with amazing **APPL-L-COTE**. The plating you apply becomes an indestructible part of the metal itself.

QUICKLY BUILDS-UP A THICK NEW PLATING WITH EACH APPLICATION.



COMPLETE PLATING KITS:
MET-L-COTE: For Chrome **\$3.95**
A other white metals...
SILV-R-COTE: For Silver-plating with pure Silver **\$3.95**
GOLD-COTE: Gold **\$7.95**
Plate with 24 K. Gold... **\$6.25**
Copper **\$3.95**; Rhodium **\$7.95**
ALL 5 METALS... \$19.95
(You Save \$6.10)



BRILLIANT AUTO TRIM—You'll be mighty proud of the dazzling new finish on your car's bumpers and trim after plating with **MET-L-COTE**. . . and remember, each time you electroplate worn areas you build up a lasting layer of coating that tremendously lengthens the life of original trim.

MET-L-COTE is constantly used in leading hospitals, and in doctors and dentists offices to Replate surgical instruments—Also in hotels and restaurants to RE-STORE cutlery.

EMPIRE MERCHANDISING CO.
Dept. JP-256
28 E. First St., Mt. Vernon, N.Y.

MONEY-BACK GUARANTEE

Please rush the Complete Plating Kits including Solution, New Pocket Applicator & full simple instructions I have checked below. I enclose full price, sent postpaid, or send C.O.D. plus postage.

☐ **MET-L-COTE**—\$3.95 ☐ **SILV-R-COTE**—\$3.95
☐ **GOLD-COTE**—\$6.25 ☐ **COPPER-COTE**—\$3.95
☐ **RHODIUM**—\$7.95 ☐ **ALL 5 METALS**—\$19.95
(Save \$6.10)

NAME _____

ADDRESS _____

CITY _____

STATE _____

Empire Mdsge. Co., 28 E. First St., Mt. Vernon, N.Y.

DORMIPHONE

YESTERDAY SCIENCE FICTION TODAY—ASTOUNDING REALITY!

A Great Scientific Discovery



For

- Faster Learning
- Superb Listening Enjoyment
- Memory Training

Today, for the first time, an ingenious device, The Dormiphone, invented by Max Sherover, president of Linguaphone Institute, does for you what no machine has ever done before! Would you like to increase your rate of learning 20% to 50% by making use of periods of relaxation and sleep? Now it is easy to master a new language, improve your speech, memorize a role in a play, learn useful facts and figures with less time, less effort. . . all this in addition to more listening pleasure out of your favorite records make the Dormiphone the most useful, 3-speed portable phonograph ever assembled?

Find Out About DORMIPHONE

Proof of what **DORMIPHONE** can do for you is fully set forth in a **FREE Booklet, "A New Dimension in Learning."** Write today. **MODERNPHONE, INC.** (Domestic Div.), 422-026 Rock Plaza, N. Y. 20.

Mail Coupon Now for **FREE Booklet, "A New Dimension in Learning."**

MODERNPHONE, INC. (Dormiphone Div.)
262-026 Rock Plaza, N. Y. 20, N. Y.
Gentlemen: Send me your **FREE Booklet "A New Dimension in Learning."**

☐ If under 18, check here for Special Booklet A

Name _____

Address _____

City _____

Zone _____

State _____

My main interest in Dormiphones is for

☐ Learning a Language

☐ Speech Improvement

☐ Memorization

☐ Listening Enjoyment

MAKE \$18.00 AN HOUR WITH New

PLASTIC SANDWICH MACHINE



This new, remarkable **PLASTIC SANDWICH MACHINE** does a permanent, beautiful, professional, protective, plastic lamination job in exactly three minutes time! Amazing earnings possible in your own home or shop permanently sandwiching **PHOTOS, SOCIAL SECURITY CARDS, IDENTIFICATION CARDS, CLIPPINGS, DIPLOMAS**, etc. between sheets of clear plastic.

Make **PLASTIC SANDWICHES** that cost you only 8c each, take 2-3 minutes time—yet sell for 50c to \$1.00 each! Laminating machines range from \$35.00 up.

PLASTIC SANDWICH MACHINE CO.

6612 N. Clark St.

Dept. LM-503

Chicago 26

FREE SAMPLE and illustrated literature, **NO obligation.**



MAKE UP TO \$10 AN HOUR AT HOME WITH 50¢ WORTH OF MICRO-FLUFF

HIGH COST OF LIVING GETTING YOU DOWN

Want to add an extra \$100 or more to your regular monthly pay check in a few **SPARE TIME** hours of pleasant occupation **AT HOME**? That's just the position I was in a few years ago when I ran across an Old-World formula for applying short cotton fibers to practically any surface, in such a manner that it looked and felt just like costly velvet or velour.

THIS PROCESS AMAZED ME

I spent several years experimenting until I developed what I now call the **FLOK-KRAFT MICRO-FLUFF** method. This **NEW METHOD** is far removed from the Old-World way of applying these short fibers. Also it permits the use of tiny fibers of **RAYON** and other modern materials in **MANY COLORS** in addition to cotton.

NO OVERHEAD—NO EXPENSIVE EQUIPMENT

Start in your basement, garage, attic, service porch, or even on a card table in your bedroom. With an hour's practice you can apply a few pennies worth of **FLOK-KRAFT MICRO FLUFF** to a yard or two of butcher paper, and make it look like \$15-a-yard velvet for window displays in the finest jewelry, gift, or department stores, etc. Takes only a few minutes and practically no effort.

MICRO-FLUFF IS BEAUTIFUL AND LONG WEARING

Truly the most amazing material you ever saw, **MICRO-FLUFF** comes in every color of the rainbow, is long lasting, has the **TOUCH** appeal of luxurious velvet or suede, and goes on practically any surface—paper, metal, wood, glass, plastic, plaster, rubber, even sponge-rubber. It is wonderful to line silverware or hosiery drawers, cover and line jewelry boxes, decorate lamps and lamp shades, finish the inside of auto trunks or glove compartments (to protect luggage and accessories from scratching) re-cover women's party shoes, photograph turntables, etc. Apply to toys, figurines, wall plaques, signs, store displays and a thousand-and-one other items, new or old. **FLOK-KRAFT MICRO-FLUFF** makes old objects beautiful and salable — increases value of many new products by 500%.

Read What Others Say ...

"Received the outfit and everyone that saw it is very enthused. I only had it about thirty minutes and got an order for a \$100 job."

Mr. C. H. Maryland

"Got \$52.50 for those 7 trunk interiors for about 4 hours work. \$7.50 per trunk."

J. O., Mo.

"... I have received my order and believe me, I'm very pleased and happy as as I've made myself MORE than the cost of my supplies already. And I've still got more jobs to do."

Cpl. G. W., S. Carolina

"... pleased with your course and I'm being swamped with work to do."

W. F., Penn.



BIG-PROFIT ORDERS COME FROM NEIGHBORS, GIFT SHOPS, STORES—ALSO MAIL-ORDER

Every household has one or more items that can be saved from discard by a **FLOK-KRAFT** job. Decorate store display cases and windows (jewelers love this) and also supply them with fast-selling **FLOK-KRAFTED** gift items and other merchandise. Manufacturers are prospects for contracts to apply **FLOK-KRAFT** to furniture, instrument cases, luggage, and hundreds of other products. Every neighborhood needs a **FLOK-KRAFTER**. **HELP US FILL A HUGE DEMAND.**

Since succeeding beyond my wildest dreams in my own **FLOK-KRAFT** business, I have concentrated on helping ambitious men get started in the same way to build a successful future, free of time clocks and nagging bosses. My plan is designed to help you start at home in spare time, and build gradually toward a full-time business with employees working for you. And you can start **RIGHT NOW**. **DON'T SEND ME ANY MONEY**, just your name and address on a postcard, and I'll rush you a **FREE SAMPLE OF FLOK-KRAFT MICRO-FLUFF**, the **FLOK-KRAFT PLAN** and full **FREE** details. I'll also arrange to send you the complete **FLOK-KRAFT MICRO-FLUFF** outfit to try out right in your home, before you agree to buy anything at all. The outfit includes detailed instructions with hundreds of show-how photographs and drawings that make everything simple, right from the start. Also included is our specially designed, high-velocity Applicator and a generous supply of **FLOK-KRAFT MICRO-FLUFF**—everything you need to get going right away. You owe it to yourself to investigate. Rush me your name and address today by Airmail, and I'll show you how to start making money at once!

NELS IRWIN, Coast Industries, Dept. 12
Los Angeles 61, California

SEND NO MONEY—MAIL COUPON NOW!

Nels Irwin—COAST INDUSTRIES, Dept. 12
Los Angeles 61, California

Please rush me **FREE** sample, details, etc. I understand that everything you send is free and that I'll be under no obligation now or ever.

NAME _____

STREET _____

CITY _____

STATE _____

KLEINS

mean a better job

201—NE
Side Cutting
Plier



301
Long Nose
Plier



202
Oblique Cutting
Plier



Here are three pliers that will help you do a better job—three tools that should be in every workman's kit.

Klein pliers are recognized by electricians, linemen and good workmen everywhere as the standard of comparison by which other pliers are judged.

The work you do is only as good as the tools you use. Be sure the tools on your bench or in your kit include genuine Kleins, famous for quality "since 1857."



Your hardware store has Kleins in stock or can get them for you quickly. Look for this new display board. It shows the most popular items in the Klein line.

Mathias KLEIN & Sons
Established 1857 Chicago, Ill., U.S.A.
7200 McCORMICK ROAD • CHICAGO 45, ILLINOIS

SPECIAL! WORLD'S GREATEST TIRE SALE!

Lo-Price Used Tires. 12 month repair guar. ins. service. **\$3.45 ANY CAR** Military-type MUD-GRIP **\$8.65 ANY CAR** guar. 12 mos.



Limited Time! Entire Stock of our Top-Grade, 40,000 mile Passenger Tires, (worn very slightly) Released by Adjusters. Advertised for months at 7.86 ea. NOW at **PRICES LISTED BELOW!** It's Cheaper Than Getting \$1 Off Just Ordinary Tires Family size, partially used tires. Check my golden rule guarantee. "The Blatt Name famous in tires for 40 years". Only Blatt offers a free replacement guarantee on ANY defective tire within 36 months FRT. Excl. CHOOSE YOUR FAVORITE BRAND. Not Recaps. Foolish to pay more—dangerous to pay less!

GOODYEAR Firestone

U.S. Goodrich. **FREE** his pictured tire ash tray Lee & others.

36 MONTH TIRE GUAR. & FREE FACTORY-TESTED TUBE

600-16	\$5.29	670-15	\$5.19	700-20	\$8.99	800-16(6)	\$5.69
650-16	5.69	710-15	5.39	750-20	9.59	850-16(6)	6.49
700-16	5.79	760-15	5.39	800-20	16.59	900-16(6)	7.09
740-15	4.89	800-13	5.69	850-20	17.29	950-16(6)	7.99
700-15	4.99	820-13	5.69	1000-20	17.29	750-17	9.99
				650-20	6.29	750-18	9.99

WHITEWALLS \$1.00 EXTRA

MARVIN BLATT 609 Spring Garden St. Phila., Pa.

AA Guar. 20 Mos. AAA 38 Months
750-20 \$9.59 800-16 \$9.99
750-20 12.99 750-20 17.39

Send Check or M.O. & this ad for FAST shipment. FOR Phila. I personally select your tires—as if my future depended on it. Read that top line again.

A "GOOD HAND" HELPS YOU SUCCEED!

LEARN TO WRITE WELL

Handwriting quickly improves with our easy-to-understand picture lessons! Put your spare time to good use! send today for ☐ FREE BOOKLET. How to Become a Good Penman, or check volumes wanted below at \$1 each: ☐ Business Writing, Artistic Writing ☐ Card Writing ☐ Bird & Design Flourishing ☐ Engraving Alphabets. COMPLETE SET \$4.90. Ask for price list of penman's supplies.

TAMBLYN SCHOOL OF PENMANSHIP
S. A. Ziller, Pres. 438 Ridge Bldg., Kansas City, Mo., USA

Learn LEATHERCRAFT

- Sell for big Profits. Markets Everywhere.
- Up to 500% Profit. Make Leather Goods, Billfolds, Bags, Belts, & 200 other items.
- EASY TO MAKE WITH THE NEW TANDY PROCESS.
- We supply complete instructions & materials.

WRITE FOR FREE DETAILS, FREE CATALOG

81 TANDY STORES COAST-TO-COAST

TANDY LEATHER CO. EST. 1919

P.O. BOX 791-TK FORT WORTH, TEXAS

FREE Catalog U-DO-IT KITS

MEN WANTED

Earn \$100 Per Week and up
AUTO DIESEL MECHANICS

Master a trade with a future—learn Auto Diesel mechanics in our shops. You learn with tools on real equipment. Earn while you learn. Many of our graduates earn \$100 per week and up. No previous experience necessary. Day and night courses. Approved for veterans. Write for free bulletin.

NASHVILLE AUTO-DIESEL COLLEGE

226 7th Ave., N., Dept. 41

Nashville 3, Tenn.



Make \$5.00 an Hour

CASH PROFIT

The Day You Start!

Start Your Own Business at Home... Sharpen Household, Garden and Shop Tools in Spare Time

Turn your spare time into Big Cash Profits with the new Belsaw Sharp-All. No experience needed to sharpen knives, scissors, shears, ice skates, mower blades, hedge trimmers, axes, chisels and circular saws... just about any household, garden and shop tool. Your own CASH business. No inventory... no calls to make. Learn how easily you can start your own spare time business. Amazing low cost easy-payment plan. Send postcard for

FREE BOOK

BELSAW SHARP-ALL CO., 706 Field Bldg., Kansas City 11, Mo.

Roy Loutzenhiser drives 38,000 miles...saves \$72. with 17 pt. Life-Time plugs

MESSAGE FROM FRANK WILLIAMS, INVENTOR OF LIFE-TIME SPARK PLUGS:

Dear Friends:

Some Life-Time Spark Plugs have now been out just about a year. Time enough for first users to start writing me about life and performance in their own cars. Roy Loutzenhiser of Antelope, Montana, writes that his set has fired hot and clean for over 38,000 miles in his 1953 Studebaker V-8. That's a saving in plug purchases of about \$22 when you add it up. But he also wrote me that his gas bill went down just about 10% which checks out almost on the button with Eddie Edmunds dynamometer test which shows 11% fuel improvement. The way I figure, that adds up to about \$72 depending upon what you pay for gas! I don't

say you can save this much money in a car that's burning some oil or isn't rightly tuned, but you can save the cost of a couple sets of ordinary plugs and a barrel of gas any time. Try a set and let me hear how you like them.
Many thanks.

Frank Williams



ORDER REGISTERED SET
for any 6 or 8 cylinder engine.
YOU RECEIVE BY MAIL, POSTAGE
PAID, this matched set as shown in
proper series (heat range and gap) for
the car or cars you indicate in coupon.

Tapered 18mm now available for late Ford models and others.



"DEALERS AND DISTRIBUTORS
WRITE FOR FULL INFORMATION"

Here's Why 17 Pt. Firing Works:

Note the circular arcing area. Four concave segments with gap the same from all points. Electricity has the property of arcing from the coldest point. Current also arcs more readily from apex of two planes than from a flat surface. Note that there are 16 apexes (where two planes meet) — all the same distance from the center electrode. Normal heat and spark erosion are spread around the entire circle and around the whole circumference of the larger center electrode.

Actually 1700 Firing Points

or more, our engineers now tell us, because the spark actually "chooses" the most favorable single point on the top, bottom or side of any outer electrode! This is one reason why Life-Time Spark Plugs do not foul or miss, waste gas or power under heat and high compression. This spectacular spark plug research break-through the first revolutionary improvement in 50 years! allows us to include this unique and unprecedented warranty with every set of plugs. WE GUARANTEE GREATER GAS MILEAGE — GREATER ACCELERATION — A MAJOR POWER INCREASE — or your money back!

8 hp
increase!

7 mph
increase!

Eddie Edmunds
LORDS DYNAMOMETER SHOP

NAME: _____
ADDRESS: _____
CITY: _____ STATE: _____

Power 200

Model	Year	Make	Model	Year	Make
1953	1954	1955	1956	1957	1958
1959	1960	1961	1962	1963	1964
1965	1966	1967	1968	1969	1970

APPROVED BY: _____

Tustin Auto Parts

214 West Main Street Tustin, California Phone: 754-1111

Represented by: Mr. Tustin
1000 Main Street, Tustin, California

Mr. Williams, 1199 of Pioneer Street, Tustin, California, has been tested on the Tustin dynamometer and has shown a 11% fuel improvement. This is a saving of about \$72 per year in gas. The set has fired hot and clean for over 38,000 miles. The set has been tested on the Tustin dynamometer and has shown a 11% fuel improvement. This is a saving of about \$72 per year in gas. The set has fired hot and clean for over 38,000 miles.

APPROVED BY: _____

NEW! SUPER-DISSIPATION INSULATOR. Made of gem-like sintered corundum. Conducts heat 40 times faster than porcelain. Special near contour vaporizes and exhausts wet carbon and oil.

SELF-CLEANING ON POWER STROKE. Confined gases exploding in chamber formed by multiple electrodes reclean arcing surfaces with each firing stroke. **INDIVIDUAL INSPECTION.** Each Life-Time Spark Plug is tested for firing in oil and for resistance to 30,000 volts/CM (The only plug which has been tested successfully at 15 to 1 compression) / **PERMANENT GAP.** After months of use Life-Time Spark Plugs like at exact factory preset.

BOAT OWNERS. Life-Time Spark Plugs are now available for all outboards and marine engines. Specify make, model and year. \$1.19 per plug postpaid.

LIFE-TIME Spark Plug Division
CONTINENTAL MANUFACTURING CORP.
Washington Blvd., Culver City, California

Gentlemen: Please mail postpaid set (s) (registered) of LIFE-TIME Spark Plugs in proper heat range and gap for my car at \$1.19 per plug (set of six, \$7.14; set of eight, \$9.52). Or send \$2 per set, balance C.O.D. California residents add 3% tax.

Make of my car is _____ year _____
Model _____ No. cyl. _____
I enclose \$ _____ (cash, check or money order)
Name _____
Address _____
City _____ Zone _____ State _____

Genuine DIAMONDS Direct from N.Y. Leading Specialist



**In Latest Style Mountings
From \$25 to \$5,000
Remarkable Savings**

BUY FOR CASH OR ON EASY CREDIT TERMS

Diamonds never get old Kaskel's, New York's leading diamond specialist since 1882, have originated a novel plan for you to enjoy great savings on diamonds reset in brand new 14Kt. gold or platinum mountings. Kaskel's plan is simple. They fine-comb the many outlets where diamonds can be secured at much lower than regular wholesale prices. These markets uncover first grade diamonds at amazingly low bargain prices. Kaskel's resets them into beautiful diamond rings, diamond bracelets, diamond pins, diamond earrings, diamond watches . . . AND . . . Kaskel's grades them far you according to nationally accepted standards. These unusual beauties are yours for a fraction of the usual market cost. You take no risk. You are 100% protected by a written bond and a money back guarantee. You can see your selection before you buy. Any size genuine diamond can be yours on a pay as you like lay-away plan. There are no extra charges.

FREE BIG CATALOG Diamond Advice FREE!

Send today for the big illustrated catalog just off the press. It illustrates many wonderful diamond bargains. All in most fashionable, up to the minute mountings, of 14Kt. gold or platinum. You also get important advice about diamonds that is in itself a diamond buying safeguard and education. Send coupon below for your copy today and learn all the facts which includes Kaskel's special pay as you like lay-away plan. There's no obligation. **SEND COUPON TODAY.**

References: Your own bank,
or any mercantile agency

KASKEL'S Dept. 608-B

KASKEL Building

41 West 57th St.

New York 19, New York

Send FREE CATALOG and advice about DIAMONDS without obligation.

Name.....

Address.....

City.....

State.....

(Diamond
Specialists
since 1882)

Learn CARBURETOR and IGNITION



Start Training at Home For This Clean, High-Class Type of Position
Get in line for a raise—or for more profits in your own shop. Learn testing and adjusting with latest-type scientific motor tune-up equipment. This enables you to locate the trouble exactly, and fix it fast—handling and getting paid for more jobs per day. There's money in this, and it's clean, high-class work which gets the respect and confidence of your customers.
Send for FREE SAMPLE LESSON
Carburetor and Ignition Specialization offers very superior opportunities for better pay and bigger profits because relatively few mechanics know anything about this time-saving, money-making new test equipment. Now our spare-time home-study method teaches you the principles and shortens your shop training. Ambitious men (age 18-55): Send for full **FACTS AND FREE SAMPLE LESSON** at once. Write today to

UTILITIES ENGINEERING INSTITUTE
2525 Sheffield Ave., Dept. OM-2, Chicago 14



HE-MAN VOICE!

STRENGTHEN your voice this tested scientific way—yes—you may now be able to improve the **POWER** of your speaking and singing voice... in the privacy of your own room! Self-training lessons, mostly silent. No music required.

FREE BOOK—er's great booklet "How to Develop a Successful Voice." It's absolutely FREE! You must state your age. Booklet mailed postpaid in plain wrapper. No salesman will call. Send your name and age **RIGHT NOW!** **Predict Voice Institute**, Dept. 210 S. Clinton St., Studio BU-1, Chicago 6, Ill.

Learn SHELLCRAFT

Wonderful, New, Easy—Up to 500% profit! Make Shell Lamps, Shell Jewelry and Novelties Sell for **BIG PROFITS!** Markets everywhere. Hand-in-Action PLAN designed for you... to learn and earn as you succeed. Shellcraft's full color pictures. **FREE** Genuine Shell Lamps, full color pictures. **FREE** and Hand-in-Action Plan Folder. Write.

NATIONAL SHELLCRAFT SCHOOL
645 26th St. S., ST. PETERSBURG, FLA.



LEARN LOCKSMITHING

Learn this fascinating, profitable trade from experts in your spare time at home! Age or physical handicap no disadvantage. Year around, steady income. Full or part time. Practical, illustrated lessons. You can make money even while learning! All materials and special tools supplied without extra charge.
LOCKSMITHING INSTITUTE, Dept. PS-74
15 PARK AVENUE RUTHERFORD, N. J.
Lic. by N. J. State Board of Education
Approved for Veterans

MEN PAST 40

Men afflicted with Bladder Trouble, Getting Up Nights, Pains in Back, Hips, Legs, Nervousness, Dizziness, Physical Inability and General Impotency send for our amazing **FREE BOOK** that

tells how you may correct these conditions and have new health and Zest in Life. Write today. No Obligation.

Excelsior Institute, Dept. B-5, Excelsior Springs, Mo.

HERE'S PROOF YOU CAN QUICKLY BECOME A TV ELECTRONIC TECHNICIAN

NO SPECIAL ABILITY, EDUCATION OR PREVIOUS EXPERIENCE NEEDED. Visit one of America's Famous Electronic Training Centers. SEE FOR YOURSELF—Without Obligation—How you can quickly qualify the proven practical LINCOLN Way. Thousands of profitable, secure career opportunities await urgently needed Men in—

TELEVISION-FM-RADIO-RADAR-MICROWAVE. Day-Even. Classes—Low Tuition. **FREE REPLACEMENT SERVICE.**

Approved for Veterans. **GET THE PROOF TODAY.**

Phone, Write for **FREE BOOKLET J**, or come in for **Facts You Can SEE!**

LINCOLN

School of RADIO & TELEVISION, Inc.
CARL GALLO, Director
1851 B'way (61st) N.Y. 23, C. 6-9300

New PROFIT-PROVEN* Home-Business!

"I make \$400⁰⁰ a week!"



*Proves
Mr. J. T. Anderson,
Inglewood, Calif.

(Notarized statement on file in our office and open to inspection.)



and **READ** what others
are saying about
Screen Print

"My first attempt at Screen
Printing netted me \$40.00."
J.R., Canada

"I would not take \$1000 for it right
now. Just what I have been searching
the world over for." C.S., Nevada

"Wonderful new method...made \$80.00
first week...swamped with orders."
R.T., Florida

"Screen Printing is nothing
less than fascinating"
S.M.D., Mass.

Cor. 1955

**SCREEN
PRINT**
TRADE MARK REG

**PRINT WITHOUT A
PRINTING PRESS!**
OR ANY SPECIAL EQUIPMENT

MAKE BIG MONEY, TOO—printing without a printing press! Learn the secrets of this new MIRACLE PRINTING METHOD... build a Big-Pay Business, SPARE or FULL-TIME, right in your own home. Never before has there been such a golden opportunity to turn pennies into dollars in profit! — to build a successful, prosperous future easily, quickly, and enjoyably—AT HOME!

WHAT IS SCREEN PRINT? It's a new, fascinating technique—so amazingly simple and economical it may soon revolutionize the printing industry! Imagine—after only a few short days, you may print many beautiful professional job for LESS THAN IT WOULD COST ON A \$5000 PRINTING PRESS!

SCREEN PRINTING IS FUN...EASY! If you like to work with your hands and make beautiful things, you'll find no Home Business that provides greater enjoyment, relaxation, and PROFIT. You'll enjoy every moment... creating beautiful printed material that may sell for really BIG MONEY!

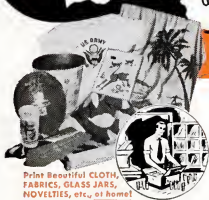
NO EXPERIENCE OR COSTLY EQUIPMENT NEEDED! Few home businesses offer such BIG PROFITS for so little time, money, or training! You don't need art ability, expensive equipment, or previous experience! You start at home with little or NO OVERHEAD. Yet you can print—almost immediately—on PAPER, GLASS, LEATHER, CLOTH—ANYTHING! Work with all colors, even the vibrant new FLUORESCENT "Glow Colors" that are in such big demand in advertising circles! It's amazing—but true!

START SPARE TIME—ON A "SHOESTRING!" Use your spare time to earn up to \$12.50 per hour, right from the start. Earn 2 INCOMES INSTEAD OF ONE. Print in your garage, basement, spare room—anywhere! Screen Printing requires little space—won't interfere with your household set-up. Later, when you see the TREMENDOUS PROFITS to be made, you may wish to make Screen Printing your full-time occupation. Become your own boss—make BIG MONEY! Others are doing it—why can't you?



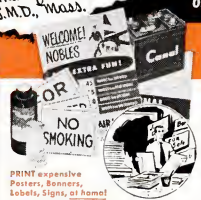
HELP FILL THE HUGE, GROWING DEMAND! Businesses in every city, every community have learned—almost "overnight"—of the amazing quality and economy of MIRACLE Screen Printing! You save them up to 30% on many jobs—yet you make up to 300% profit! When the word gets around people come to you—no selling necessary! Because this sensational printing discovery is so new, many Screen Printers sell exclusively by mail!

WE SUPPLY EVERYTHING YOU NEED! Every secret, enough materials to start making money almost immediately can be yours! Never before has such a wonderful "profitability" been offered to anyone desiring to start a profitable spare or full-time business of his own! We guide you every step of the way with our Personal Counseling Service & Home Business Plan, explain how we have helped others, and how we can help you, too! All the CONFIDENTIAL, money-making facts are yours! **START YOUR OWN BUSINESS TODAY!** It's still time for you to get in on the ground floor!



Print Beautiful CLOTH,
FABRICS, GLASS JARS,
NOVELTIES, etc. at home!

MIRACLE Screen Print lets you print on all surfaces, all materials—big advantage over regular print shops. You provide a service offered only by Screen Printers — may have the entire field to yourself!



Print expensive
Posters, Banners,
Lobels, Signs, at home!

Realtors, Political Candidates, business firms, many are discovering that Screen Printing is the best answer to their needs. Be the first in your area to fill the huge demand!



Print Colorful
ADVERTISING
DISPLAYS at home!

Stores, markets, gas stations, theaters—all businesses need eye-catching displays. Ordinary printers simply can't compete, price-wise, with Screen Printers, on many jobs!

Free!

COMPLETE
REVEALING DETAILS,
Authentic Samples, Proven
Big-Money Opportunity Plan,
Large Illustrated "How To" Booklet.

Screen Print Co., 15127 S. BROADWAY, LOS ANGELES 61, CALIF.

Learn the Secrets—RUSH COUPON TODAY!

SCREEN PRINT CO., Dept. 12
15127 S. Broadway, Los Angeles 61, Calif.

Gentlemen: Please mail me Free Revealing Details, samples, Opportunity Plan, etc.—All this is sent absolutely Free and sent to me by return mail. I am under no obligation now or ever.

Name

Address

City Zone State

Some make more, some less; T. THORN reports:

\$690 gross in single MONTH IN MY OWN BUSINESS!

Start YOUR OWN Business!



• Here's YOUR chance to start a money-making, year-round business of your own and make the success you've dreamed about. R. O. Donnelly took in \$40 in seven hours. O. W. Ware landed a \$750 hotel job. R. Traynor grossed over \$450.00 in five days. Homes, hotels, offices, clubs, offer you big profit possibilities. Auto upholstery also.

NO SHOP OR OFFICE NECESSARY. You clean furniture on customers' premises. No hauling. No high rents. Supplies inexpensive; operate from your home. What you take in is mostly profit.

• If you want to be your own boss—free from layoffs, strikes and bosses, we will help you to start and succeed. Don't delay... read the facts, then decide for yourself.

MAIL COUPON TODAY FOR FREE BOOK

VON SCHRADER MFG. CO.
211 "D" Pl., Racine, Wisconsin

Without obligation rush your **FREE** booklet about how I can start my own permanent, profitable electric Upholstery Cleaning business.

Name

Address

City Zone State

LAW FREE BOOK THE LAW TRAINED MAN

Write today for a **FREE** copy of illustrated law book, "THE LAW TRAINED MAN," which shows how to earn the professional Bachelor of Laws (LL.B.) degree through home study of the famous Blackstone Law Course. All necessary books and lessons provided. Moderate cost; convenient monthly terms. Write for **FREE** law training book today. **Blackstone School of Law, 225 N. Michigan Ave. Dept. 122, Chicago 1, Ill.**

Founded 1890

AUTOMATIC MAKES NEW PROFITS

Cuts new teeth in 50 seconds—any size 4 to 16 points. Old teeth fall off on chips. Easy to operate. A perfect job.



BURR MFG. CO.

8943-V VENICE BLVD. LOS ANGELES 34, CALIFORNIA

FREE! Write Now for Descriptive Literature

Free! VALUABLE U.S.A!

Sensational Get-Acquainted Offer! Get this scarce genuine postage stamp, as illustrated, picturing first U.S.A. (issued in 1847). PLUS big collection of 30 all-different United States: 19th century, valuable \$5 stamp, etc. PLUS collection beautiful Commemoratives including '93 Columbian, Boy Scouts, Wild West, many others. **EXTRA:** Other exciting offers; 64-page Collector's Guide; Big Bargain Catalog of U.S. Stamps. **Send 10c to help cover mailing costs.** **ACT NOW!** **HARRIS, 2455 TRANSIT BLDG., BOSTON 17, MASS.**



WHAT TREASURES WILL YOU FIND?

Big cloth bag contains over 1,000 genuine foreign postage stamps—from more than 30 strange countries in Asia, Europe, Africa, South Seas, etc.! Unpicked, unsorted—just as received from foreign natives, banks, missionaries. Nobody knows what's inside! Guaranteed. **Only \$1.00** worth over \$10 at Catalog prices or money back. **\$1.00 ppd** **HARRIS CO. 2232 Transit Bldg., Boston 17, Mass.**

IT'S EASY... MAKE MONEY IN PHOTOGRAPHY

If you are over 17—**2000** pay and fascinating work await you in photography! Start making money quickly in sparetime—step by step. **Write TODAY** for **FREE** catalog. Also method trains you at home! **Approved** Yes. **Resident Trainer, 40th Year.** **NEW YORK INSTITUTE OF PHOTOGRAPHY** **Dept. 5 10 West 33rd Street New York 1, New York** **46th YEAR**

SHORTHAND IN 6 WEEKS

Famous **SPEEDWRITING** shorthand, 120 words per minute. No symbols; no machines; uses ABC's. Easiest to learn, write and transcribe. Low cost. **300,000** taught by mail. For business and Civil Service. Typing available. **22nd Year.** Schools in over 400 cities. Write for **FREE** booklet to:

Speedwriting **Dept. 2602-6 55 W. 42 St., N.Y., 36, N.Y. ®**

See Dan on TV "Big Top" Show

Save 60% on FAMOUS "TV-BIG TOP" DAN LURIE BARBELLS
FREE—60 muscle building courses—68 photos with your order
50 lb. set **\$8.48** 150 lb. set **\$20.48**
100 lb. set **\$13.98** 200 lb. set **\$25.98**
Order by mail—**50%** with order. Balance C.O.D. Extra wts. 13c lb. **FOE Plant**
DAN LURIE BARBEL CO.
52-51 Bristol St., Dept. 670-B, Brooklyn 12, N.Y.
LET STRONGMAN DAN MAKE YOU A MAN
Results guaranteed or money back

GIANT FREE CATALOG OF OPTICAL BARGAINS

ASTRONOMICAL TELESCOPE HEADQUARTERS
Complete Line of Astronomical Telescope and Associated Accessories. **Selection of lenses, prisms, war surplus optical instruments, parts and accessories. Telescopes, microscopes, binoculars, etc.** America's No. 1 source of supply for Telescope Makers. **SEND ONLY \$1.00** for beginner's kit and big instruction booklet. **Stock 2-3 weeks for FREE catalog N.** **EDMUND SCIENTIFIC CORP., Barrington, N.J., U.S.A.**

EYE GLASSES by MAIL As low as \$1.95

WRITE FOR FREE CATALOG WITH 14 LENS SAMPLE CARD
Thousands of Customers **Est. 1927**

QUALITY READING-MAGNIFYING OR BIFOCAL GLASSES FOR FAR AND NEAR
ADVANCE SPECTACLE COMPANY, Inc.
537 S. Dearborn St., Dept. SP-2 Chicago 5, Illinois

FREE

A NEW HOME INDUSTRY



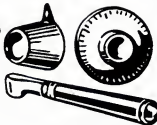
GEARS



FISHING LURES



JEWELRY GEMS



**HANDLES
KNIVES - DIALS**



**STATUES
FIGURINES**

Let us show you how extremely easy and **PROFITABLE** it is to make beautiful and useful things out of **LIQUID PLASTIC, LIQUID MARBLE, LIQUID IVORY, LIQUID GLASS, LIQUID EBONY, LIQUID PORCELAIN, LIQUID GEMSTONE, CERAMICS, ETC.** . . . as easy as pouring water out of a glass! Make tools, dies, gadgets, novelties, jewelry, gifts, artware, ceramics . . . a million useful things! Valuable products that sell themselves on sight because of their exciting beauty and practical utility.

For years we have been teaching and guiding ambitious people in how to acquire profitable and fascinating occupations, starting at home or in your own shop (with only a few dollars investment), how to make more money than ever before! We now offer **YOU** the same unlimited opportunities!

MANUFACTURE WITHOUT TOOLS OR MACHINERY!

No previous experience or special ability is needed in order to manufacture with **PLASTICAST Liquid Plastics**. Our special book the "**WONDERS of LIQUID PLASTICS**" reveals all. Our Liquid Plastics serve so many diverse and useful functions, and can so easily be converted into beautiful and attractive products that thousands of our customers are now actively engaged in a wide variety of pride giving and profitable businesses established with the aid of our products and instructions!

FREE Catalog 19 is devoted exclusively (108 pages) to the art of manufacturing **EVERYTHING** without tools or machinery! Send for it today! We will include valuable book **THE WONDERS of LIQUID PLASTICS** absolutely **FREE**. Catalog No. 19 - 25c.

PLASTICAST CO., Dept. PC-307
6612 N. Clark St. Chicago 26, Ill.

WE BUY THOUSANDS OF PLASTICAST ITEMS ANNUALLY

Let us start you in business! We always need **GEMCRAFT** stones, made from **PLASTICAST-INGS**, for our regular customers. We guarantee to buy your output too, when made from **PLASTICAST MATERIALS**.

MATERIALS and INSTRUCTIONS

We can supply you with everything you need. **MATERIALS** in single or gross lots. As much or as little as you want. **INSTRUCTIONS** included with all shipments. In addition, we carry a complete library of beginners and advanced technical books on the manufacture and sale of plastics, from which you can select.

Send only 25c for big, giant-sized catalog of Cast- ing Materials, Molds and Accessories and we will include **FREE** our remarkable book "The Wonders of Liquid Plastics."

PLASTICAST CO., Dept. PC-307
6612 N. Clark St., Chicago 26, Ill.

I am enclosing 25c for **PLASTICAST** Catalog No. 19 and include **FREE** of extra cost the book "**THE WONDERS of LIQUID PLASTICS**."

Name _____ Age _____

Address _____

City _____ Zone _____ State _____

DRAFTSMEN



CASH BIG PAY CHECKS!

Train Now for
more success,
greater security

LEARN AT HOME IN SPARE TIME
(or at college in Chicago)

Check the want ads in any newspaper—SEE the big-pay opportunities open to you as a draftsman. What's more, you can learn this well-paid, prestige profession at home—quickly, easily! No special talent needed. Get complete, step-by-step Chicago Tech lessons in the mail, spend a few pleasant hours studying each week. In a short time you'll be a well-trained draftsman, ready to take your pick of many good jobs. Act now!



FREE INFORMATION—MAIL COUPON TODAY!
Get **FREE TRIAL LESSON** plus information about C.T.C. practical training. Learn what successful Chicago Tech graduates say about high pay and opportunities in drafting. No charge, or obligation.

CHICAGO TECHNICAL COLLEGE

B-224 Tech Bldg., 2000 So. Michigan Ave.
Chicago 16, Illinois

Mail me **FREE** Lesson with information about big opportunities in **DRAFTING**.

Name Age

Address

City Zone State

BIG PAY JOBS

for men who qualify in

DIESEL



TRAIN NOW FOR A DIESEL FUTURE. Steady, high-pay jobs await men qualified in Diesel, Tractor, and Heavy Equipment. Are you qualified for job and advancement opportunities in this fast-growing field? You can qualify!

COMPLETE DIESEL COURSE NOW AVAILABLE. If you are ambitious and want to get ahead in this big money field, you'll want to know about the complete Diesel home training course now offered by Interstate Training Service. Covers all phases of operation, repair, service. Easy to master in spare time. No interference with present job. Up-to-the-minute. Regularly revised to cover new developments. We invite comparison of material offered. Advisory placement service for our students.

YOU OWE IT TO YOURSELF to investigate Interstate Training Service Diesel Training. Thousands agree it has helped them to better jobs...better pay! It can do the same for you!

WRITE FOR FREE INFORMATION TODAY

INTERSTATE TRAINING SERVICE, Portland 13, Ore.
Please see that I receive **FREE 24-page book**,
"Getting Ahead in Diesel."

NAME AGE
ADDRESS
CITY ZONE STATE

I HAVE BEEN AVERAGING

\$73,067.93 gross in cash every month

during 1955, in my Mail Order business, which I started with a very limited capital, in 1953. Because I am not covering even 1% of the market, I can supply you with merchandise, sales letters, and valuable advice based on experience. Can be operated on a small scale by man or woman. I began in my home—now employ thirty-seven. My firm belongs to Chamber of Commerce, well-rated financially by my bank and suppliers. This is not a crazy scheme, but a legitimate business. If you are looking for an outstanding, worthwhile Mail Order opportunity—then I'll prove to you that this is it. The fact that I am grossing almost a million dollars annually in my own Mail Order business should be of interest to you. One refundable dollar (to eliminate curiosity seekers and children), will bring you the most amazing Mail Order success opportunity you have ever read. Mail Order, P. O. Box 1715 PS, Dallas, Texas.

Do You Make These Mistakes in English?

MANY persons say "between you and I" —use "who" for "whom"—don't know whether to use one or two "is's" or "in's" or "it's." Every time you speak or write you show that you are a command of effective English brings you added advantages, better opportunities.

You can improve your English through Sherwin Cody's 100¢ self-correcting invention. If you are ever embarrassed by mistakes in grammar, spelling, punctuation, or pronunciation, write for **FREE** book "How You Can Master Good English in 15 Minutes a Day." No obligation. **SHERWIN CODY COURSE IN ENGLISH**, 572 Central Drive, Port Washington, N. Y.



MASTER MIND!

Learn Short-Cut Mathematics

Juggle figures, do baffling number tricks. Make people gasp at your marvelous lightning-quick mind. Multiply 4 figures by 4 figures without using old-fashioned multiplication! Etc. cloth-bound volumes fully illustrated course for self-instruction.

Sharpen up Your Brain Power
Includes worked-out problems, answers, etc. Sensational bargain, only \$2.95, postpaid or COD plus postage. Satisfaction guaranteed or refund. Order this amazing "Short-Cut Mathematics" today!
NELSON-HALL CO., 210 S. Clinton St.
Dept. 48U-1 Chicago 6, Ill.

\$2.95 Complete



GROW MINIATURE TREES

Grow authentic, LIVE dwarf trees!
Fascinating hobby! Fabulous profit!

SEND FOR FREE SEED & INFORMATION!

MINIATURE NURSERY CLUB

Dept. KK-2, P. O. Box 8794
Los Angeles 8, California

ARTHRITIS—RHEUMATISM VITAL FACTS EXPLAINED

FREE DESCRIPTIVE BOOK

How crippling deformities may be avoided. This amazing **FREE BOOK** explains why ordinary methods give only temporary relief —if that. Describes a drugless method of treatment successfully applied in thousands of cases. Write for this 44-page **FREE BOOK** today. No obligation.
BALL CLINIC, DEPT. 36 **EXCELSIOR SPRINGS, MO.**

HERE'S A PROFITABLE BUSINESS FREE!

MONEY MAKING OPPORTUNITY FOR YOU WITHOUT INVESTMENT!

No experience needed to act as our Local Dealer for **MASTERS WORK** Uniform garments. Every business concerns a prospect. Advertising embroiled on garments is a big sales feature. Stores can't compete. You can easily earn up to many thousands of dollars yearly. We supply all Sales Equipment **FREE**. Write **GEORGE MASTERS GARMENT DIV.**
701 WATER STREET, LIGONIER, INDIANA



Start a profitable manufacturing business in spare time

with your own home
as your headquarters



RIGHT at this moment there is a tremendous demand for new business enterprises in a branch of the plastics industry. Fortunately, this is a type of manufacturing business that does not require heavy or expensive machinery, rented space for storage, production or sales. A portable hand machine does the work wherever electric current is available, and the working area can be in almost any part of your home.

The opportunity that is open to you today, is to meet this growing demand in a new industry by establishing yourself as the manufacturing agent in your own trading area. Several hundred of our machines are already in use in both large and small communities. Some are even being operated successfully by women whose family duties make it necessary for them to be at home during the day, but whose family income is not enough to meet rising expenses. Most are being operated by men. Many started in spare time just to pick up an extra five or ten dollars for an evening's work. They found the work so profitable that some have now given up former jobs to devote full time to a business of their own.

One of our manufacturers gets all of his business by mail. Orders and money come to him in envelopes and he sends his products out the same way. Another delivers his entire output to stores in the vicinity. An-

other does a wholesale business supplying other manufacturers who do the selling. Still another works with advertisers in the manufacture of plastic advertising novelties and specialties.

The operation of the machine is simple and easy for anyone to learn. It does not require any knowledge of chemistry, mechanics, or electricity. And what some say is best of all, a manufacturing business like this enables a person to make good money without any house to house canvassing. The machine turns out from \$5.00 to \$15.00 worth of work per hour and it can be operated for as short or long a time as you wish.

We have prepared a simple step by step instruction manual that not only tells how to operate the machine, but also tells how to get the business coming in at a profitable clip right from the start. We will lend a copy of this book to any serious minded man or woman with the

understanding that a copy will be given them free if and when they purchase a machine—or the copy we lend can be returned if you decide not to go into the business. Reading it will not cost you anything.

If you are interested in a nice little home business that can bring in an extra \$60 or more for ten or twelve hours work in spare time, send your name. All information on the book and machine will be sent free, postage prepaid and no salesman will call to bother you. You read about it in the privacy of your own home without outside pressure and then decide whether you'd like to take the next step. Address your envelope to me in person. Send me the coupon below. Or, if you prefer send your name on a post card and ask for "Free information on starting a manufacturing business at home." Either way, send your name today and find out about this wonderful new fast growing money-making business.

RAYMOND E. BRANDELL

1512 Jarvis Ave., Dept. L-92, Chicago 26, Ill.

Raymond E. Brandell, 1512 Jarvis Ave., Dept. L-92, Chicago 26, Ill.

Dear Mr. Brandell: Please send information showing how I can start a profitable manufacturing business in my home in spare time. All the information you send will be mailed to me free of charge and no salesman is to call on me. I am not under any obligation to go ahead with the business and there is no charge for this information now or any other time.

Name

Address

City Zone State

BUY DIRECT and SAVE UP TO 1/2 on ITALIAN ACCORDIONS EASY TERMS



Act
NOW!

Accordions of famous makes and breath-taking beauty now can be yours! Mail coupon for FREE Color Catalog and amazing Wholesale Prices.

5 DAYS
FREE
TRIAL

MONEY
BACK
GUARANTEE

MAIL
COUPON
NOW

TRY BEFORE YOU BUY

World's largest selection direct from Importer to you! 30 models to choose from. SATISFACTION GUARANTEED or your money back. Trade-ins accepted. Terms as low as \$10 monthly. Write today!

Big
Color
Catalog
FREE!

Send me Free Color Catalog—full details.

Name

Address

City State

ACCORDION MANUFACTURERS & WHOLESALE OUTLET

2003 West Chicago Ave., Dept. P-26, Chicago 22, Ill.

ENGINEERING DEGREE IN 27 MONTHS

BIG DEMAND
FOR GRADUATES

AERONAUTICAL, CHEMICAL, CIVIL, ELECTRICAL, MECHANICAL and ELECTRONIC ENGINEERING (Inc. Radio and TV) Hundreds of young men are earning B.S. ENGINEERING DEGREES annually in this recognized institution—year around operation. New terms start quarterly. Many students earn a major part of their college expenses in this large industrial center.

Low tuition. Competent instruction. Thorough, intense, practical program. Modern, well-equipped laboratories including new physics laboratory and modern wind tunnel. Individualized instruction emphasized.

Government approved for G.I.'s Engineering preparatory courses. Students from 48 states and 21 foreign countries. Enter March, June, Sept., Dec. Send coupon for free catalog and full information. Enroll now.

INDIANA TECHNICAL COLLEGE

626 E. Washington Boulevard, Fort Wayne 2, Indiana

Please send me free information on B. S. Engineering degree in 27 months as checked.

☐ Aeronautical ☐ Chemical ☐ Civil
☐ Electrical ☐ Mechanical ☐ Electronics

Name

Address

MAKE BIG MONEY AS A LANDSCAPE CONTRACTOR

Make \$20 to \$60 a day. Millions of new and old homes, estates, etc. need modern landscaping. Easy-to-follow Home Study Course trains you to handle all types of Landscape Contracting. Earn while learning. Hundreds of successful graduates. NATIONAL LANDSCAPE INST. 310 S. Robertson Blvd., Los Angeles 48, Calif. Dept. 5-26.

Write for
FREE Book.



STAMP COLLECTORS

314 STAMPS 25c

Big imported collection of 314 all different foreign stamps including Monaco, Jules Verne Science-Fiction Set showing balloon & elephant, steamer & Atlantic Platform, giant tank, Argentina Flying Horse, Bolivian Revolution set, National Anthem, Italy AMG set PLUS hundreds of fascinating stamps of the world. This collection, cataloging over \$7.00, is yours for only 25c to introduce our bargain approvals. BONUS: 48 Page Stamp Dictionary included free.

Stampex Co., Dept. HP, P. O. Box 47, White Plains, N. Y.

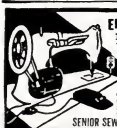
REAL ESTATE BE A BROKER

PAYS BIG! SEND FOR FREE, BIG, ILLUSTRATED CATALOG NOW! Graduates report making substantial incomes. Start and run your own business quickly. Men, women of all ages, learn easily. Course covers: Sales, Property Management, Appraising, Loans, Mortgages, and related subjects. STUDY AT HOME or in classrooms in leading cities. Diploma awarded. Write TODAY for free book! No obligation.

Approved for World War II and Korean Veterans

WEAVER SCHOOL OF REAL ESTATE (Est. 1936)
20205 Grand Ave. Kansas City, Mo.

FREE
BOOK
TELLS
NOW



ELECTRIFY YOUR SEWING MACHINE

Buy direct and save! Kit comes fully wired, installed in a jiffy. Fits all machines. ALL-NEW PATENT.

a. AG-10 Motor & bracket. Multi-speed foot control. a. Cord set & block. 112 V 60 c. Full instructions. Steel pulley & belt.

BONUS: 10 day free trial. Reg. \$2.95 Sewrite given FREE with kit. Reg. \$7.50 sinking shura only \$1 with order. Send no money. Kit sent C.O.D. Or send money order and we'll pay postage. State whether wheel on your machine turns towards or away from you. Shipment w.t. & ins.

SENIOR SEWING MACHINE CO., Box 142, Dept. PS-06, Bklyn 6, N. Y.

RUPTURE!

An amazing Air-Cushion

Invention allows body

freedom at work or play.

Light, neat, cool, sanitary.

Durable, cheap. Day and night protection helps

Nature support weakened muscles gently but surely.

No risk. Sent on Trial! Write NOW for free Booklet and

Proof of Results. All correspondence confidential.

Brooks Company, 374-D State St., Marshall, Mich.



NEW FALSE PLATE

FROM YOUR
OLD ONE IN 18 HOURS

AS LOW AS \$14.95

Send us your old broken, cracked or loose plates and we'll transform them into new lightweight wonder plastic plates. NO IMPRESSIONS needed with our revolutionary method. We use your own old plates. We remake them completely in only 18 hours. Missing teeth carefully matched and replaced. We GUARANTEE TO SATISFY YOU OR REFUND YOUR MONEY.

SEND NO MONEY—Send us your name today and we'll RUSH COMPLETE DETAILS. Begin to enjoy life right now. Clip this Ad; save it and send for free facts.

CHICAGO DENTAL PLATE LABORATORY • Dept. PS256
30 N. Dearborn St. • Suite 807 • Chicago 2, Ill.



THIS TANK HOLDS

4,538 TROPICAL FISH
WORTH \$2,456⁶⁵!



WOW!

-AND YOU BREED
THEM IN YOUR SPARE
TIME - IN YOUR HOME



FANTASTIC NEW HOME-BUSINESS OPPORTUNITY!

"I predict a new home industry will be the breeding of Tropical Fish. I predict the Breeding of Tropical Fish will be the National's No. 1 pet shop favorite." (This is what the renowned Mr. Crawell predicts on his National T. V. Program—(he's right too).)

YES BOB, I BREED THEM
IN MY BACK PORCH. THEY
ALMOST SELL THEMSELVES,
TOO. BELIEVE ME
THE "BOOM"
HAS STARTED

FANTASTIC!
BUT WHAT
"BOOM"?

THE TROPICAL FISH
"BOOM". EVERYBODY
WANTS THEM—I CAN'T
BREED ENOUGH TO
FILL MY ORDERS

HOW ABOUT BIG COMPANIES. MUST
GIVE YOU REAL COMPETITION?

NOPE. NEARLY ALL
TROPICAL FISH ARE
BRED BY SMALL
SPARE TIME
HOME-BREEDERS
LIKE ME. WE KEEP
VALUABLE BREEDING
SECRETS TO OURSELVES

DID IT COST
YOU MUCH
TO START
?

NO—ONLY A FEW DOLLARS,
A LITTLE SPACE AND MY SPARE
TIME AND THE LITTLE KNOWN
BREEDING SECRETS ARE
ALL YOU NEED TO START. IF
YOU'RE INTERESTED—LEARN
THE FACTS TODAY!—THE
"BIG BOOM" HAS STARTED
SO CASH IN ON IT
NOW!

EARN BIG PROFITS In Your Spare Time

(Breed thousands in your own home)

If you have a little space in a SPARE ROOM, PORCH, BASEMENT, GARAGE... ANYWHERE. Investigate this "chance-of-a-lifetime" opportunity of breeding rare tropical fish for profit. The tropical fish "BOOM" IS JUST BEGINNING and here's your opportunity to cash in on it now. It is estimated that the staggering sum of \$780 MILLION DOLLARS will be spent on tropical fish within the next 10 years. Investigate now—Rush coupon below.

BREED FASCINATING VARIETIES

IT'S EASY! Once you know the "breeding secrets" you may breed EXOTIC, RADIANT "Angle Fish," Beautiful "Gourami" that are 12 different colors; Majestic "Fighting Fish" that actually CHANGE COLORS before your eyes and will FIGHT UNTIL DEAD! "Danios" that are ZEBRA STRIPED, TRANSPARENT FISH, "Mysterious Weather Fish" that PREDICT THE WEATHER"—BRILLI-

ANTLY BEAUTIFUL rare tropicals of all kinds. SOME SELL FOR \$100.00 pr. but most sell for \$2 to \$20 pr. Amazing Profits!

● WE SUPPLY EVERYTHING YOU NEED to start if you ACT NOW because

WE NEED NEW BREEDERS NOW!

This advertisement is an URGENT APPEAL OPPORTUNITY! Please rush coupon today!

SOME TROPICAL FISH LAY 300 TO 600 EGGS AT A TIME. That's why tropical fish breeding is so profitable. Nature multiplies your profits for you.

ANGLE FISH Majestically Beautiful. Female lays about 400 eggs at a time.

JEWEL FISH with eggs. Beautifully colored and valuable. Female lays 100 to 300 eggs. Retail for \$4 pr.

KISSING FISH—Kiss each other on sight. Female lays over 200 eggs at a time. Retail for about \$5.50 pr.

JOIN WITH OTHERS THAT ARE ALREADY SAYING: "Guys. Prospects Tremendous!" I. K. S. Calif. "Earned \$125.00 first week!" T. S. Calif. "Dealers want all I can breed!" J. P. Oregon. "Big Money and how." Y. V. G. Me. "Pays off gross already." R. D. New York, etc. large dividends.

1 and 2 FREE!
(BOTH)

Colorful "How to Learn Breeding Secrets" BOOKLET with FULL COLOR prints of fabulous rare tropical fish. REVEALING INFORMATION, CONFIDENTIAL DETAILS.

Amazing VUER-PROJECTOR KIT Details Complete with FULL COLOR slides (\$4.95 value—yours free for investigating). Handsome, precision-viewing instrument. Shows gorgeous tropical fish come to life before your eyes.

MAIL THIS
COUPON
BELOW
TODAY!



Tropical Fish Breeders of America, Dept. C2

15121 S. Broadway, Los Angeles 61, California

Please Rush FREE COLORFUL BOOKLET and amazing VUER-PROJECTOR KIT details to me. Both Free! Sending for this does not obligate me in any way.

Name _____ Age _____

Address _____

City _____ Zone _____ State _____

Tropical Fish Breeders of America, Dept. C2

15121 S. Broadway, Los Angeles 61, Calif.

REFRIGERATION

TRAIN FOR GOOD PAY IN A FIELD THAT ISN'T CROWDED!



**NOW! you can
LEARN ELECTRIC
MOTOR REPAIR**

... A good-paying, modern profession



OPPORTUNITIES EVERYWHERE!

Don't drift into a rut! Don't train for something that everybody and his brother are studying! Consider the facts. . . The average small home has at least 11 electric motors! Big homes have many more—In phonographs, recorders, oil burners, refrigerators, washers, fans, clocks, mixers, cleaners, air conditioners, etc., etc. Millions more in office, industrial, mining and transit equipment. Be the well-paid expert who can keep them working!



FREE STUDY GUIDE

A unique Study Guide booklet of 500 practical motor study questions—priced and sold separately at 25c—is yours FREE with your request to examine **ELECTRIC MOTOR REPAIR** book. Makes learning easier—speeds up the work! See coupon.

LEARN FAST . . . no lessons to wait for! EARN WHILE YOU LEARN

Practice by repairing motors for friends, neighbors or nearby business houses. Earn while you learn this profitable, fast-growing business! If sold as a course and sent to you in lesson form, you'd regard **ELECTRIC MOTOR REPAIR** as a bargain at 10 times the price! Instead, you get it all at once—for only \$6. You learn fast . . . and right. Here are just a few of the motor types that are fully covered.

Split-Phase Motors
Capacitor Motors
Repulsion-type Motors
Polyphase Motors
Alternating-Current Motor Controls
Direct-Current Armature Winding
Direct-Current Motors
Universal, Shaded-pole, and Fan Motors
D-C Generators, Synchronous Motors and Generators
Electronic Motor Controls, etc.



... for only **\$6**

FOR THE COMPLETE TRAINING . . .

COVERS EVERY MOTOR TYPE IN COMMON USE

Every day, more and more electric motors and motor control systems are being used BOTH in industry and in home appliances. The expert who can keep them working properly is a valuable man in this Electrical Age. The pay is good. The field is tremendous—and growing rapidly. Trained men find opportunities everywhere for full or part time work. **ELECTRIC MOTOR REPAIR**, the big 560-page training course book teaches you step by step—quickly and easily—at home in spare time. There is no other book like it. Ideal for beginners or for actual bench use in busy shops. OVER 100,000 COPIES already in use in leading vocational schools, shops, and for home study.

SHOWS YOU HOW . . . Every Step of the Way!

Based on what you can learn quickly at home from **ELECTRIC MOTOR REPAIR** you can train for prompt, profitable installation, servicing, repairing and complete rewinding of practically any motor in use today.

You learn fast! You learn right! Every subject is clearly explained by text AND ALSO by more than 900 illustrations and diagrams. You not only read what to do—you SEE how it is done. Quick reference guides tell you how to handle specific jobs. When a certain motor comes in for repairs, just look it up. **ELECTRIC MOTOR REPAIR** tells you what to do—and exactly how to do it. **ELECTRIC MOTOR REPAIR** is designed for use right at the service bench. Unique

Duo-Spiral Binding divides the book into two sections so that both text and related diagrams can be viewed together. An instructor standing by your side could hardly do better! **ELECTRIC MOTOR REPAIR** covers the entire field—from alternating- and direct-current motors and generators, etc., to mechanical and electrical and electronic control systems. Right down the line, it explains trouble diagnosing, repair, rewinding and maintenance in a way you can easily understand.

**Send No Money!
PRACTICE 10
DAYS FREE!**



DEPT. P5-26, RINEHART & COMPANY, INC.
232 Madison Ave., New York 16, N.Y.

Send 560-page **ELECTRIC MOTOR REPAIR** book for 10-day FREE EXAMINATION. I will then either return book promptly or send \$6.00 in full payment. Include FIVE Study Guide which is mine to keep whether I buy book or not. (Send cash with order and we pay postage. Same 10-day return privilege with money refunded.)

Name _____

Address _____

City, Zone, State _____

(Outside U.S.A. \$6.50 cash only—same return privilege)

TERRIFIC!

16 x 50
Regularly sell for
\$69.50
NOW \$36.93

These binoculars have been drastically reduced in price, simply because they and their cases show signs of "shelf wear", received during the holiday rush season. Because they cannot, or at least should not, be sold as "brand new", we have cut the price almost in half for immediate clearance.

MECHANICALLY AND OPTICALLY THEY ARE A-1. 5" high. Water-dust resistant. 4x wide objectives assure greater illumination and brighter, sharper images. Weight only 27 ounces!



SALE 7x35
Regularly \$27.95
NOW \$21.95

Brand new glasses. The "Aristocrat." In the short period it has been in the market, has met national acclaim. It's an all weather performer with newest streamlined design, perfectly balanced, for ease of operation. Weight only 20 ounces! Only 3 1/2" high! Provides brilliant, sharp images for day or night viewing! Increased sales have lowered production costs and we are passing this \$8.00 savings to you. **THIS SALE ONLY!**

30 DAY NO RISK TRIAL

If not satisfied return for full refund. Made in Japan. Leather case, straps included. Add 10% Fed. tax. Cash orders prepaid. C.O.D.'s require \$2.00 deposit. **UNITED BINOCULAR CO., Dept. AR-2616, 9043 S. Western Ave., Chicago 20.**

DEALERS WANTED. WRITE FOR FREE CATALOG

AW Men and Women **STUDY AT HOME** for Business Success and **LARGER PERSONAL EARNINGS**, 44 years expert instruction—over 114,000 students enrolled. LL.B. Degree awarded. All text material furnished. Easy payment plan. Send for **FREE BOOK**—"Law and Executive Guidance"—**NOW!**
AMERICAN EXTENSION SCHOOL OF LAW
Dept. D-10, 201 North Wells Street, Chicago 6, Ill.



Colorcrete Can Be Your Big Opportunity

Local Colorcretors are Needed Everywhere

Colorcreting is a small investment enterprise, rich in sales potentials, high in income possibilities. Work is easy and fascinating. No experience required; we supply complete instructions.

Colorcreting is a building-beautifying process, with Colorcrete being pneumatically applied to new or old masonry surfaces such as concrete or stucco. Lasts indefinitely—25 years or more. Easily cleaned. Gleaming white, or a choice of 30 colors.

Colorcrete equipment is compact and portable. Easy to operate and practically wear-proof. Easy-payment terms when desired. Write at once for Opportunity Book.

COLORCRETE

Colorcrete Industries, Inc.
572 Ottawa Ave., Holland, Michigan

IN CANADA: DUNN MASONRY MACHINERY LIMITED
1022 Dundas Highway, Cooksville, Ont.

BIRTH RATE TO HIT NEW HIGH IN 1955
Latest census figures show that the nation's annual birthrate is well on its way to a new high. Economists say the market is awfully hot for those who can supply baby shoes.

Looking For
An ENDLESS Source of Income?

A Baby Shoe Metallizing Business of Your Own Offers UNLIMITED Possibilities for Full or Part Time Earnings.

Think of it—Four and one-half million babies were born in the United States last year and the birth rate is increasing annually. Get your share of this huge market. Write for facts about our genuine metallizing equipment and supplies, complete instructions, plus the world's largest selection of beautifully plated all-metal baby shoe mounts. Send for FREE catalog today!

HOLLYWOOD BRONZE SUPPLY

Dept. B15 • 1624 East First Street • Los Angeles 33, California



Stammering?

BREAK THAT HABIT NOW!
SUCCESSFUL EMERY CORRESPONDENCE COURSE FEATURED IN NEWSWEEK & MEDICAL RECORD. WRITE TODAY FOR FREE INFORMATION.

EMERY INSTITUTE

P.O. Box 867-PS-2, Winter Park, Florida

500 TRICKS **MAGIC TRICKS**
IT'S FUN TO DO MAGIC
Be popular! Amuse—mystify—entertain! For 30 years Douglas has satisfied customers all over the world. Now, you can enjoy this fascinating hobby. Only 10¢ brings our Catalog 500 Tricks, containing brand new tricks for pocket, parlor, stage. Join in the fun—send 10¢ today!
Douglas Magicland, Dept. P, Dallas, Texas

Inventors' Handbook \$1.00

Fact-packed manual written by men who helped develop, make and market more than 100 products. Tells the "inside story", how to avoid excessive patent costs, needless expenses, costly mistakes; how to find the right mfr., materials, methods; how to know costs, set right prices, determine market, methods, know profit potential; how to make money without patent; all the solid, practical working facts you must have to make money. Satisfaction guaranteed or \$1.00 promptly refunded.

COSOM INDUSTRIES, INC.

6012 Wayzata Blvd. Minneapolis 16, Minn.

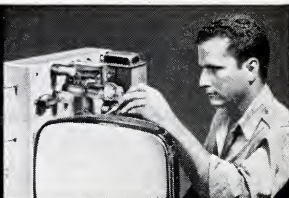
MODERN TRANSPARENT ROOI **Genuine Dupont Plastic NEW FALSE PLATE**
From Your Old, Loose Plate NO IMPRESSIONS NEEDED New, revolutionary Dupont Plastic System actually transforms your old, loose, cracked, clipped plate into a new, natural-pink Dupont Plastic Plate with same teeth or new, natural mated teeth. ONE DAY SERVICE
Only **\$18.95**
30-DAY MONEY BACK TRIAL
SEND NO MONEY—Just your name and address for FREE details. Save at our low price! Highest prices paid for Dental Gold. ALL-STATE DENTAL LABORATORIES, 22 W. Madison, Dept. 812, Chicago 2.

BUILD 16 RADIO
CIRCUITS AT HOME WITH THE NEW DELUXE 1956 PROGRESSIVE RADIO "EDU-KIT"
ONLY **\$19.95** COMPLETE
All parts, instructions, Soldering Iron, Test-er included. 30 Day Money Back Guarantee. PROGRESSIVE "EDU-KITS", INC. Room 338-A, Progressive Building, 497 Union Ave., Brooklyn 1, N.Y.
Gentlemen: Please Rush me Free Descriptive Literature concerning "EDU-KIT". Also send me Free Radio-TV Schematic Literature. No obligation.
NAME _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

**COYNE offers
LOW COST**

TELEVISION RADIO-ELECTRONICS

Training in
Spare Time AT HOME



The future is YOURS in TV-RADIO!

A fabulous field—good pay—fascinating work—
a prosperous future! Good jobs, or independence
in your own business!

Coyne brings you the first *truly lower cost*, MODERN—QUALITY Television Home Training; training designed to meet Coyne standards. Not an old Radio Course with Television "tacked on". Here is MODERN TELEVISION TRAINING including working knowledge of Radio. Includes UHF and COLOR TV. No Radio background or previous experience needed. Personal guidance by Coyne Staff. *Practical Job Guides* to show you how to do actual servicing jobs—*make money early in course*. With Coyne Television Home Training you pay only for your training, *no costly "put together kits"*.

B. W. COOKE, President



Coyne—the Institution behind this training... the largest, oldest, best equipped residential school of its kind. Established 1899.

**COYNE
ELECTRICAL SCHOOL**

500 S. Paulina St., Dept. 26-HT3, Chicago 12
A TECHNICAL TRADE INSTITUTE OPERATED
NOT FOR PROFIT

**SEND COUPON FOR FREE
BOOK**

and full details,
including easy
Payment Plan.

**No obligation, no
salesman will call.**



COYNE ELECTRICAL SCHOOL
Television Home Training Div.
500 S. Paulina St., Chicago 12, Ill.,
Dept. 26-HT3

Send Free Book and details on Television Home Training. This does not obligate me and no salesman will call.

Name _____
Address _____
City _____ State _____

LEARN UPHOLSTERY

in your spare time
run your own
business
AT HOME



**FREE
BOOK**
with
sample
lessons

with course
YOU MAKE



OTTOMAN

with
SLIP COVERS
You're to Keep
or Sell

BE YOUR OWN BOSS

Earn more from the start! Set up your own profitable business, in your own home, enjoy steady income, independence for life—in the booming field of Custom Upholstery & Drapery. Right off you start learning with tools, complete frames, fabrics and materials, included **FREE** with your UTS course. You learn skilled professional custom upholstery, reupholstery, furniture finishing, repairs, how to make beautiful slip covers, window cornices, cushions and draperies. **EARN WHILE YOU LEARN**, in your spare time... the UTS easy way.

FREE illustrated book, with sample lessons.

Get ready for well-paid job, and big profits, from steady work, in your own home, running your own business. Mail us—**ON NOW!** Training in N.Y. school also available.

APPROVED FOR VETERAN TRAINING

UPHOLSTERY TRADES SCHOOL
Dept. EB-1610, 721 B'way, N. Y. 3, N. Y.
Send me **FREE** book "Your New Way to a Successful Career" and **FREE** sample lesson. No obligation—no salesman will call.

☐ Home Study ☐ N.Y. School Training

Name _____

Address _____

City _____ Zone _____ State _____

☐ Check if Korean Veteran

FREE! ELIZABETH II EMPIRE STAMPS



Rush coupon below *at once!* We'll send you one of the most exciting offers ever made! Think of it!... from the far corners of the British Empire—Falkland Islands, Ceylon, Seychelles, South Africa, Tristan da Cunha, to name just a few—this generous collection of hard-to-get (mint and used) Elizabeth II stamps, Coronation and others. They're *all genuine, all different!* Also a **FREE** copy of our helpful illustrated "Stamp Collector's Guide"! **PLUS!** In handsome color, a reproduction and story of the World's Rarest Stamp! Other valuable offers included for your free inspection. Don't delay—this rare offer may be withdrawn soon! If coupon has been clipped, send direct to: **GARCELON STAMP CO., Dept. 2PSE Calais, Maine.**

GARCELON STAMP CO., Dept. 2PSE Calais, Maine.

Rush **FREE** Empire Stamps and other offers.

(PLEASE PRINT)

NAME _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____



These 1000's of
NEW facts
NEW ideas
NEW figures
NEW methods

Step up your MACHINE SHOP I.Q.

your key to
stepped-up pay

Just Out

New machines, methods, and materials—great metalworking advances—face every man in the field with urgent need for plenty of new know-how. That's why R. Le Grand, American Machinist magazine editor, took a long-famous handbook, completely revised it, brought it up to the minute as

NEW
MACHINE SHOP I.Q.

**BIGGEST
IMPROVEMENT
IN 45 YEARS**

The NEW AMERICAN MACHINIST'S HANDBOOK

1579 pages • 774 illustrations • 45 sections covering

Covers feeds and speeds, tools, jigs, fixtures, materials, standards, tolerances, methods—thousands of details. Gives you quick, plain, dependable answers. See how it meets your needs. Just mail coupon.

FREE
10 DAYS Over 4 months to pay

McGRAW-HILL BOOK CO.
Dept. PS-2, 327 W. 41 St., N. Y. C. 36

(Offer Good in U.S.A. Only)

Send me Le Grand's New American Machinist's Handbook for 10 days' FREE examination. In 10 days I will send \$3.00 plus five cents for delivery, then \$2.00 monthly until \$11.00 is paid, or return book postpaid.

(Print)
Name _____
Address _____
City _____ Zone _____ State _____
Employed by _____ PS-2

The BIG DEMAND is for Engineering Technicians!



- Electronics
- Television
- Radio

**HIGH PAY
CAREERS**
Await Central-
Trained Men

Nationally recognized, accredited Central training is designed to help you qualify for the higher-paying, advanced position of *Electronic Engineering Technician*—in the shortest possible time. In Central's "Progressive Plan," each completed phase of training qualifies you for a better-paying position.

Central offers 3 proven training plans to fit the requirements of ambitious young men: (1) Home Study, (2) Combination Home Study-Resident and (3) Full Resident Course—complete Electronics-TV-Radio training leading to Associate of Science Degree. Through our nationwide placement service, thousands of Central graduates have entered almost every technical phase of the electronic industries.

Don't limit yourself! Get the facts on Central's complete training. Preliminary training need not interfere with present job. For FREE brochure and full information—fill in below and mail this ad today.

Central offers courses Approved for Veterans

CENTRAL TECHNICAL INSTITUTE

Dept. T-26, 1644 Wyandotte, Kansas City, Mo.

Name _____ Phone _____
Address _____ County _____
City _____ State _____

"YOU ARE UNDER ARREST!"

There's a Thrill in Bringing a Crook to Justice Through Scientific

CRIME DETECTION!



We have taught thousands this exciting, profitable, pleasant profession. Let us teach you, too, in your own home. Learn Finger Printing, Fire Arms Identification, Police Photography and Criminal Investigation thoroughly, quickly and at small cost.

Over 800 of All American Bureaus

of Identification employ students or graduates of I. A. S. You, too, can fit yourself to fill responsible crime detection job with good pay and steady employment. But don't delay—get the details now. Let us show you how easily and completely we can prepare you for this fascinating work, during spare time, in your own home. Write today stating age, **INSTITUTE OF APPLIED SCIENCE**

(A Correspondence School Since 1916)

1920 Sunnyside Ave., Dept., 1362, Chicago 40, Ill.

**Be A
FINGER
PRINT
Expert**

FREE!!!
Send for Thrilling
"BLUE BOOK
OF CRIME"

PROFITS IN EXPORT-IMPORT

Earn big money from your home anywhere in USA or Canada. Opportunities Galore in this exciting International Mail-Order Business. No experience and little capital necessary. Travel abroad. Enter this rapidly growing field. Earnings unlimited. Complete satisfaction guaranteed. "Free" details. Act Today!

UNIVERSAL SERVICES

Dept. 51 Clayton 5, Missouri

HYPNOTISM

Be Popular Amaze Entertain

Learn to apply Hypnotism and Autosuggestion in short time by training at home, with **GUARANTEED RESULTS—DON'T DELAY.** Write to America's oldest, most famous Hypnotic school for free information—now—today. Sent in plain wrapper.

SCHOOL OF APPLIED HYPNOLOGY

Dept. 22 120 Central Park South N. Y. 19, N. Y.

• automatic •

POWER TILL

- Tills Automatically
- Works ALL SOILS!
- Width: 24" to 7"

SEE YOUR
DEALER
OR WRITE



UNIVATOR

UNIVATOR, INC., 2030-45 Center St., Berkeley, Calif.



OWN a BUSINESS without INVESTMENT

There's big money in your community taking easy orders from garages, service stations, lumber yards for Work Uniforms that advertise Easy sales, big profits. Repeat business insures future. Represent finest, largest line in the field. Show huge selection of styles, embroidery finishes, including miracle "wash and wear" Dacron, Orlon, etc. Every order you need to get started sent FREE. **TOPPS, Dept. 542, Rochester, Ind.**

COMPLETE NEW

FALSE IN 24 HOURS

FROM YOUR OLD \$1595
NOW LOW AS...

New process transforms old, broken or loose plates into new lightweight plastic plates. **NO IMPRESSION NEEDED.** Let us help you enjoy life again. You will be at the head of the line with this new method. Using your own old plates, we will remake them completely in only 24 hours. Missing teeth are carefully matched and replaced. Work is done on an absolute **MONEY BACK GUARANTEE.** **SEND NO MONEY FREE** just push your name and address for full details. If your teeth are loose, we'll tell you how to tighten them before duplication. Act now.

Tri-Grip Dental Labs., 7th Fl., 127 N. Dearborn, Dept. 82, Chicago 2, Ill.



DRAFTING

**Offers You —
MORE MONEY
JOB SECURITY
EXCITING OPPORTUNITIES
BIG PAY PROMOTIONS
PROFESSIONAL STATUS**

IT'S EASY — AT HOME — IN YOUR SPARE TIME — PAY AS YOU LEARN

Completed your course and was made Shop Foreman with a 50% increase in salary. W.R.

After completing your course my salary increased from \$350 to \$820 per month. G.T.W.

Was promoted ahead of four other men with a pay increase after completing your course. W.K.A.



PROFESSIONAL EQUIPMENT Included At No Extra Cost! Professional instruments, large drafting board, complete set of triangles, lettering guide, french curve, Engineer's scale, T-square, etc.

ADDITIONAL EXTRA TRAINING IN CLEVELAND AT NO EXTRA COST
50 HOURS OF SPECIALIZED, POST-GRADUATE TRAINING FOR TWO WEEKS AT OUR RESIDENT SCHOOL.



SEND FOR **FREE** SUCCESS BOOK AND FREE SAMPLE LESSON



CLEVELAND ENGINEERING INSTITUTE

RESIDENT and HOME STUDY COURSES

MECHANICAL OR AERONAUTICAL

IN JUST A FEW SHORT MONTHS, you too, can be cashing the big pay checks and enjoying an assured future in industry. Never before has there been such a demand for these key men. You can keep your present job while you prepare for a better one. Get into the profession that pays off with success and security. You need no previous experience or training. C.E.I.'s modern, practical courses are prepared especially for Home Study. A Professional Engineer will guide and train you . . . what's more, we help you get a job. Many of our graduates and today's leaders were once in your spot and they used Drafting as their ladder to success. Let our C.E.I. DIPLOMA open the way for you!

MAIL COUPON TODAY

CLEVELAND ENGINEERING INSTITUTE
DEPT. P52F
6300 Euclid Ave. — Cleveland 3, Ohio

☐ Mechanical ☐ Aeronautical

NAME _____ AGE _____

ADDRESS _____

CITY _____ STATE _____

No Obligation — No Salesmen

How Much Do *you* Want to Make?

\$15.20 AN HOUR?



"For every hour I have devoted to PRESTO, I find that I have earned an average of \$15.20 an hour."

William Wydaliss, Ohio

\$75 TO \$80 A WEEK?



Mr. Walter Gable has been selling Presto Fire Extinguishers for over 4 years. This is what he writes: "My selling time has usually averaged less than a day or two a week. These part time sales have brought me as much as \$75.00 to \$80.00 a week."

Walter Gable, Md.

\$1,000.00 A MONTH?



"I'm making more than \$1,000 a month with PRESTO—and I haven't touched bottom yet."

Charles Kama, Texas

Salesmen Rave About "Sell on Sight" PRESTO Fire Extinguisher



Wouldn't you like to make the kind of money these successful men made? Then rush name, address NOW for Sales Kit, amazing money-making plans, full story of "Miracle Midget" super-effective PRESTO Fire Extinguisher everyone needs, wants, BUYS from you at only \$3.98, while you make liberal profit on each one. If you wish, request full-size Demonstrator PRESTO—only \$2.50 plus postage, C.O.D. charges, or enclose \$2.50 now and we pay postage. Helps get fast orders—may be returned for FREE re-fill as often as you wish. Write TODAY!

Merlite Industries, Presto Division
114 East 32nd St., Dept. 16-F, New York 16, N. Y.
In Canada: Mopa Co., Ltd., 371 Dowd St., Montreal 1, P.Q.

Before Starting Any Business...

learn these revealing profitable secrets!

If you know a trade or occupation — why not go into business for yourself? Why not make the profits others are now making? Let National Business Consultants show you how.

IT'S EASY TO START A NEW BUSINESS

It's easier than you think—once you learn the simple ABC's of building a new business of your own. National Business Consultants has shown over 5000 others how to be successful—let us show YOU too. We guide you every step of the way with sound, proved, simple business practices. Send for our free book today.



FREE BOOKLET!

Proves it's easier than you think to build a business for yourself. Send for it.

EXPAND YOUR OWN BUSINESS

Learn our tested, profit-making methods for business success. If you already own a business, let N. B. C. guide you too. You'll be amazed.

SEND FOR FREE BOOKLET TODAY!

"How to Start a Business" is jam-packed with revealing information. In easy-to-understand language it explains how to start and make any kind of business profitable. Free for the asking! Sent to you in confidential plain envelope. Just write:

1956

National Business Consultants

Office A-2 Los Angeles 61, Calif.

Gentlemen: Rush me Free Booklet without obligation. No salesman will call.

Name _____

Address _____

City _____ Zone _____ State _____

OFFICE A-2 LOS ANGELES 61, CALIFORNIA

SEND FOR Free Record START SPEAKING SPANISH or FRENCH

ALMOST OVERNIGHT!



MORE MONEY



NEW CAREER



TRAVEL FUN

HERE'S the easiest way to learn a new language. Listen to FREE 2-sided non-breakable record. Let your eyes follow words in FREE sample lesson. Almost at once you'll be chatting whole sentences in your new language with a perfect accent! Offer may end soon. Rush 25c to help cover cost of special packaging, shipping of free record, lesson. State language you want. We'll also send free information on full Cortina course. No obligation.

CORTINA ACADEMY

"Originators of the Phonograph Method"

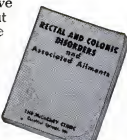
Dept. 122, 136 W. 52nd St., New York 19, N. Y.

Also:
GERMAN
ITALIAN
RUSSIAN
JAPANESE
BRAZILIAN



Is CONSTIPATION Warning You Of Something That May Be Dangerous?

Chronic constipation is usually not a disease in itself; it is often a symptom of something else that "pills" can give little help to. Why not find out now, from an authoritative source, what your constipation may mean—and the modern treatment for it? Write today for important FREE book of facts to McCleary Hospital, 271 Elms Blvd., Excelsior Springs, Mo.



BUY IT WHOLESALE!

GET UP TO 40% OFF

Start a Buying Service at Home. SPARETIME. GET BIG-NAME MERCHANDISE FOR SELF AND CLIENTS UP TO 40% LESS THAN REG. PRICE. SALES EASY, AS YOU CAN GIVE SLEAZABLE DISCOUNTS, STILL MAKE FAT COMMISSIONS. Post Card brings FREE COPY "The Wholesale Plan".

FREE! "THE WHOLESALE PLAN"

American Buyers Service

HERTEL STATION, DEPT. PS BUFFALO 16, N. Y.

make your own Gems 29.50

The Gem Maker comes complete with all necessary equipment, including a super-charged diamond blade for sawing, and all wheels for grinding, shaping and polishing; also complete instructions. The complete equipment as shown, less motor and belt, for only \$29.50, f.o.b. Burlington, Wisconsin. Write today for information and literature.

B & I MANUFACTURING CO.
Dept. 8 Burlington, Wis.

WHEELS WHEELS WHEELS

7" Disc Wheel 3/4" Tire 3/4" sleeve	45c ea.
8" Disc Wheel 1 1/2" Tire 1 1/2" sleeve	70c ea.
7" Disc Wheel 1" Tire 1 1/2" ball bearing	80c ea.
8" Disc Wheel 1 1/2" Tire 1 1/2" ball bearing	\$1.00 ea.
6" Disc Wheel 1.50 semi-pneum. Tire 1 1/2" B.B.	\$1.35 ea.
8" Disc Wheel 2" semi-pneum. Tire 1 1/2" B.B.	\$1.50 ea.
10" Disc Wheel 1.75 semi-pneum. Tire 1 1/2" B.B.	\$1.50 ea.
12" Disc Wheel 1.75 semi-pneum. Tire 1 1/2" B.B.	\$1.85 ea.

Above wheel prices include hub esp. Plus Postage, C.O.D.

AXLES—Sizes 5/16 in. - 3/4 in. - 1 1/4 in. - Cut to size—End holes drilled.

UNITED STEEL STAMPING CO.
12131 S. PORIA STREET PS-2 CHICAGO 43, ILLINOIS

Find HIDDEN TREASURES

GOLD, SILVER, PRECIOUS METALS with the Famous Model 27 Metal Detector. Lightweight, ultra-sensitive, low cost. None finer. Also GEIGER COUNTERS for uranium and the VIOLITE for tungsten. INFORMATION FREE

THE Delectron CORP.
5528 Vineland Ave., No. Hollywood, Calif.

HIGH WAGES!

Are being paid to Operators of Bulldozers, Draglines, Back Hoes, Earthmovers and Motor Graders. Contractors want our Graduates. Learn these skills NOW

National School of Heavy Equipment Operation
P.O. Box 8243-A6, Charlotte, N. C.

Please send me your School Catalog FREE

Name.....Address.....
City.....State.....



Start TODAY to enjoy an exciting new hobby! Get this big, valuable collection of gorgeous, multi-colored triangle shaped postage stamps... brought to you from strange and mysterious lands in the wilds of Africa, enchanting Europe, exotic Latin America, etc. All genuine, all different—picturing man-eating reptiles, jungle birds, action-packed sports, ancient clipper ships; PLUS scarce airmails, fabulous commemoratives, giant and midget-sized stamps. EXTRA! Bargain Catalog. "Collector's Manual" plus other exciting offers for your inspection. Enclose 10c for mailing costs. Supplies limited. ACT NOW!

JAMESTOWN STAMP CO. DEPT. N2PS, JAMESTOWN, N. Y.

RUSH my Free "Triangle" Collection and other offers. I enclose 10c for mailing costs.

Name.....

Street.....

City.....State.....



**Do YOU Want to Qualify for
A BETTER JOB AT BIGGER PAY?**



CLIMB TO \$\$\$! in Spare Time at Home

• Jobs are calling—calling to those who want more responsible jobs, in bigger pay brackets, with increasing chances for promotion—and who have the ambition to devote some of their spare time to acquiring necessary knowledge and skill. As little as just a few hours a week, in time you can easily spare, can produce surprising results in lifting you up to higher and higher levels of employment, income and security—even eventually to management positions or a business of your own. In the coupon below are listed some of the large number of training opportunities offered by AMERICAN SCHOOL—now in its 58th year. Check the one that interests you most and fill in your name and address. Or if you prefer some other career, write the subject in the margin. Then mail the coupon without delay.

—FULL INFORMATION...NO COST...NO OBLIGATION—

AMERICAN SCHOOL, Dept. G246, Drexel at 58th, Chicago 37, Ill.

Without obligation, please send FREE and postpaid, full particulars about the subject checked below.

- | | | |
|--|---|--|
| <input type="checkbox"/> Accounting | <input type="checkbox"/> Diesel Technician | <input type="checkbox"/> Mechanical Technology |
| <input type="checkbox"/> Apprenticeship Courses | <input type="checkbox"/> Drafting—Building Trades | <input type="checkbox"/> Metalworking Courses |
| <input type="checkbox"/> Architecture & Building | <input type="checkbox"/> Drafting—Machine Trades | <input type="checkbox"/> Plumbing—Practical |
| <input type="checkbox"/> Automotive Technician | <input type="checkbox"/> Electrical Engineering | <input type="checkbox"/> Private Secretary |
| <input type="checkbox"/> Better Foremanship | <input type="checkbox"/> Electricity—Practical | <input type="checkbox"/> Retail Merchandising |
| <input type="checkbox"/> Bookkeeping | <input type="checkbox"/> Electronics—Industrial | <input type="checkbox"/> Salesmanship—Outside |
| <input type="checkbox"/> Business Management | <input type="checkbox"/> HIGH SCHOOL COURSES | <input type="checkbox"/> Sheet Metal Work |
| <input type="checkbox"/> Civil Engineering | <input type="checkbox"/> Mechanical Engineering | <input type="checkbox"/> Tool Making |
| <input type="checkbox"/> Contracting | | |

Name _____ Occupation _____

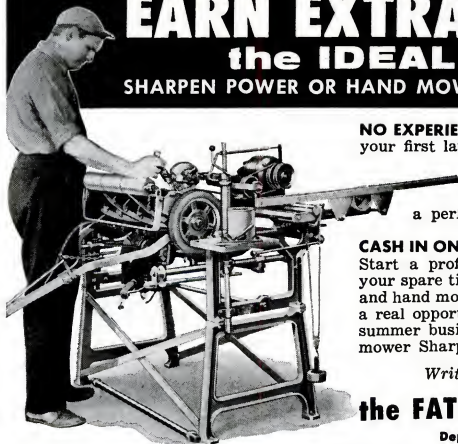
Home Address _____ Age _____

City _____ State _____

Canadian Residents: Write American School, 1610 Sherbrooke St., West, Montreal

EARN EXTRA MONEY the IDEAL way!

SHARPEN POWER OR HAND MOWERS LIKE AN EXPERT!



NO EXPERIENCE NEEDED—You can sharpen your first lawnmower expertly on an Ideal® Sharpener. Just put the mower in your Ideal—no need to take it apart—and you'll have a perfect cutting mower in minutes.

CASH IN ON THE POWER MOWER BOOM—Start a profitable business full-time, or in your spare time at home. Hundreds of power and hand mowers are in use in your area. It's a real opportunity. Be ready for spring and summer business . . . get your Ideal Lawnmower Sharpener now!

Write for **FREE** catalog to:

the FATE-ROOT-HEATH CO.

Dept. PS-2, Plymouth, Ohio

IDEAL LAWNMOWER SHARPENERS, THE QUALITY LEADER FOR 52 YEARS!

FEBRUARY 1956 67

free!

1956 ALLIED ELECTRONIC SUPPLY CATALOG

**324
value-packed
pages**

**Save on Everything
in TV and Radio
Parts & Equipment**

**Everything for Experimenters,
Builders, Amateurs, Servicemen,
Engineers & Hi-Fi Specialists**

Send for ALLIED's big 324-page value-packed guide to *everything* in TV, Radio and Electronics! Select from the world's largest stocks of High Fidelity systems and components; recorders and phono equipment; TV tubes, antennas and accessories; Amateur station equipment and supplies; P.A. systems; test instruments; latest build-your-own kits; industrial electronic supplies—plus *everything* in electronic parts, tubes, transistors, tools and books. Save on everything in Electronics—send today for your FREE 1956 ALLIED Catalog.

**Everything in Electronics
From One Reliable Source**

send for it **FREE
CATALOG**

ALLIED RADIO

ALLIED RADIO CORP., Dept. 7-B-6
100 N. Western Ave., Chicago 80, Ill.

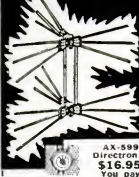
☐ Rush FREE 1956 ALLIED 324-Page Catalog

Name _____

Address _____

City _____ Zone _____ State _____

Super Powerful All Channel TV RECEPTION IN ALL DIRECTIONS



**Rocket DIRECTRONIC
MOTORLESS TV ANTENNA**
360° Electronically Switched Beam
• No Motors • No Ghosts
• No Roof Orientation • Flick of Switch
Clears Picture Instantly
In the city or in an ultra-rinse area, the DIRECTRONIC will out-perform ordinary antennas. Only the Motorless 360° DIRECTRONIC TV Antenna offers "around the compass" reception WITHOUT rotors. Clarity of picture will amaze, it's so bright, so sharply defined. A-599 "Serviceman's Array" contains Hi-Pac molded insulator of extremely high tensile strength, 18 hi-tensile aluminum alloy elements, 1 set connecting stubs (Universal I-Cutouts) for mating to 1/2" DIRECTRONIC Beam Selector, 75' Cable, 25% discount on C.O.D. orders, please. Money Back Guarantee.
NATIONAL ELECTRONICS OF CLEVELAND
5608 EUCLID AVE., DEPT. 5-2 CLEVELAND 3, OHIO

POWER MOWER KITS FREE PLANS

Have one of the finest mowers money can buy. Write for **FREE PLANS and PARTS LIST** showing you how to **SAVE MONEY** by assembling TRIANGLE's POWER MOWERS.

SPECIAL FACTORY PRICES
Kits, Parts, Engines, Wheel, etc. 18" and 20" sizes; 3 or 4-wheel models; belt or direct drive. Latest improvements, sturdy construction, money-back guarantee full refund in FREE catalog for complete TRIANGLE MOWERS ready to mow at low Factory Prices. Write today.

▲ TRIANGLE MFG. CO. Dept. SA2, Ft. Scott, Kan.

FIND HIDDEN RICHES!

NOW—find buried treasure, gold, silver, and metal objects, with sensational 3 1/2-lb. locator—GOLDAK'S "FIND-IT" ... only \$49.50 complete with earphones, batteries, instructions.

Manufacturers of metal detection devices since 1932

Write for **FREE Literature** full line metal, mineral locators; geiger and scintillation counters.

GOLDAK CO. 1544 W. Glenoaks Blvd., Glendale, Calif.

SAVE MONEY ON U S GOV'T SURPLUS

Buy surplus direct from US Government. These are samples of the savings that can be made. Life boat \$12.00. Grinder \$4.69. Shaper \$15. Dump truck \$76.77. Tractor \$75.00. Typewriter \$7.51. Freezer \$50. Spray painter \$15.25. Motor \$4. Hunting, fishing, camping, sporting Equip, jeep, boat, tools. Hundreds others may be purchased at tremendous savings through our Bulletin "Surplus Sales." Price \$1.00. The Abacus Press, Box 169AAA, Dept. 5, East Hrfd. B, Conn.

RUPTURE



RELIEF...OR YOUR MONEY BACK
Write now for free booklet and pictures of rupture care. You can be helped...work steady, with low cost, easy to wear Web Truss, thousands satisfied.

WEB TRUSS CO. Dept. PS-2, Hagerstown, Maryland

YOU BUILD 'EM—WE SELL 'EM EARN UP TO \$50.00 A DAY AT HOME

Here is a new business for people who would like to make extra money full time or spare time. Our program enables you to work in your home and participate in national sales secured through our firm. You assemble luggage and special cases for photographic equipment—musical instruments—salesmen's samples and all types of portables. We supply complete instructions—materials—tools—everything. No previous experience is necessary. Write for free details. Abarski Cnscription, Dept. CB, 807 W. Sunset Blvd., Los Angeles 12, California.

DIESEL - AUTO MECHANICS DESPERATELY NEEDED

Big Pay... Good Future

NEVER IN HISTORY has there been such a tremendous demand for Diesel and Gasoline Mechanics. Authorities report a shortage of 150,000 auto mechanics. Virtually all heavy power equipment such as stationary power plants, farm tractors, boats, trucks, buses, earth moving and construction equipment is rapidly converting to Diesel Power, creating the greatest demand in history for Diesel Mechanics.

YOUR SUCCESS IN THIS FIELD depends upon the reputation of the school you attend and the quality of training you receive. It is only natural you will want and should have the very best in training. We urge you to send for our big free booklet, which is almost like visiting with us.

THIS BOOKLET clearly emphasizes the advantages of **THE WORLD FAMOUS BAILEY METHOD** of "LEARN-BY-DOING" on the most modern equipment...

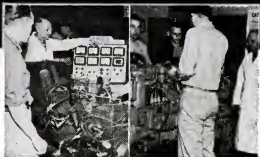
TAKES YOU ON A STEP BY

STEP CAMERA TOUR through our spacious modern shops, where you see **BAILEY** students in action.

IT EXPLAINS WHY IT IS NECESSARY TO KNOW BOTH DIESEL AND GASOLINE MECHANICS, in order to get the **BIG PAY JOBS** and advance rapidly in these fields!

IT POINTS OUT HOW OUR BAILEY METHOD permits you to learn **both Diesel and Gasoline Mechanics** for the price of one... in the amount of time ordinarily required to learn just one of these subjects... and finally it explains completely how you are provided with part time employment and housing during your training period and the success we are having in the placement of Bailey Graduates with America's leading companies.

WE ARE CONFIDENT after reading the material we send you... you will agree we offer the finest training in the country.



Students learning trouble shooting on Motor Analyzer.

Students learning Diesel operation.

MAIL TODAY!

Please mail immediately this free booklet without obligation.

FREE BOOKLET



Name _____

Address _____

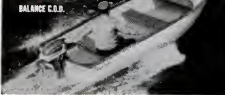
City _____ State _____

Approved for Veteran and Non-Veteran

BAILEY TECHNICAL SCHOOLS

1650 S. Grand St. Louis 4, Mo.

\$100 deposit



LIFETIME FIBER GLASS 15' FISHING CRAFT

Performer "SKIPPER" 15' Save approx. \$150 over any other 15' fiber glass boat. Full price \$375 F.O.B. Costa Mesa, Calif. (Crating \$10 additional.) Purchase price includes special non-slip foredeck, polished aluminum bow handles and lifting handles, double bottom flotation tanks and heavy duty neoprene rubber transom pad. Big, deep, roomy —this is the new fast planing hull (written up in May, 1955, Popular Science)—will plane at top speed with relatively low-powered motor—does 32 m.p.h. with 25 h.p. motor. This new design allows two fishermen to stand on the same side with safety. (Carries six adults with ease and comfort.) Choice of blue or green impregnated color. Special fiber glass hull is 10 times stronger than wood—no maintenance, painting or caulking ever required. Beam: 51". Max. Depth: 31". Weight just 210 lbs. Compare this price and value with all others. Shipped completely insured. Full factory warranty. 12 MODEL—Fishing, sport, pleasure cruisers. Send for **FREE BROCHURE**. Dealers inquire.

U.S. FIBER GLASS PRODUCTS, INC. Boat Division, 1711 Anaheim Ave., Costa Mesa, Calif.

LEARN MEAT CUTTING AT NATIONAL

Pay After Graduation



The steady dependable trade of Meat Cutting taught easily in 8 short weeks. You **LEARN BY DOING** under actual meat market conditions in big modern school at Toledo.

For beginners or men with experience. Get a Profitable store of your own. Remember, **PEOPLE MUST EAT!** Big pay jobs. Free employment help. Thousands of successful graduates.

Buying, cutting, percentage, pricing, advertising, selling, etc. A complete retail meat education. National School established 33 years. Get National training **NOW**. Pay your tuition in easy weekly payments

after you graduate. Get all the facts. Send coupon for **FREE 52 page school catalog—TODAY**. G.I. Approved.

National School of Meat Cutting, Inc.
Dept. 51-B, Toledo 4, Ohio

Send me your **FREE** school catalog on National Training at Toledo in Meat Cutting, Meat Merchandising and Self Service Meats. No obligation. No salesman will call.

Name _____ Age _____

Address _____

City _____ State _____

Approved for training Korean Veterans

You Can Depend On

STRONGER Yet SAFER ANACIN to relieve PAIN

Won't Upset The Stomach

Anacin® not only gives *stronger, faster* relief from pain of headache, neuritis and neuralgia—but is also *safer*. Won't upset the stomach and has no bad effects. You see, Anacin is like a doctor's prescription. That is, Anacin contains not just one but a combination of medically proven, active ingredients. Scientific research has proved no *single, drug* can give such strong yet such safe relief as Anacin. *Buy Anacin Tablets today!*

Shrinks Hemorrhoids New Way Without Surgery

Science Finds Healing Substance That Relieves Pain—Shrinks Hemorrhoids
For the first time science has found a new healing substance with the astonishing ability to shrink hemorrhoids and to relieve pain—without surgery.

In case after case, while gently relieving pain, actual reduction (shrinkage) took place.

Most amazing of all—results were so thorough that sufferers made astonishing statements like "Piles have ceased to be a problem!"

The secret is a new healing substance (Bio-Dyne*)—discovery of a world-famous research institute.

This substance is now available in suppository or ointment form under the name *Preparation H*. Ask for it at all drug counters—money back guarantee. *Reg. U. S. Pat. Off.

Make COPPER ENAMELLED JEWELRY at Home in Spare Time



TREMENDOUS EARNINGS!

America's latest sensational fad—ENAMELLED JEWELRY! Enamel copper, steel and silver in 3 to 4 minutes time. Make hundreds of dollars worth of earrings, cuff links, brooches, lapel pins, the clasps, etc., in your own kitchen! No previous experience needed. VITRO-NAMEL OUTFIT includes improved, faster heating, larger capacity kiln with many patented features: 6 powdered enamels, tongs, asbestos pad, 12 jewelry findings, assortment of 10 heavy copper blanks, solder, sand paper, polishing material, oil filter, screens, electric cord, instruction manual, SILVERPLATING COMPOUND. Everything you need to begin making jewelry at once. Rush order today or send **\$9.75** for free illustrated book.....

VITRO-NAMEL CO.

6612 N. Clark St., Dept. VE-204, Chicago 26

CONSTIPATION

FREE BOOK—Tells Dangers



Learn more about Colon Disorders, Piles, Fistula, Constipation, and commonly associated chronic ailments. 40-page book—FREE. The Thornton Minor Hospital, Suite 249-C, 911 E. Linwood, Kansas City 9, Mo.



**100
POUND
SET
\$9.80**

Extra
Places Only
10c Pound

BARBELLS

140-Pound, CHROME DELUXE Barbell-Dumbbell set only \$16.80.
This is our feature set and is the finest ever manufactured.
Training with adjustable weight is the **BEST** way to keep fit; the **ONLY** way to develop great strength and a perfect body. As the oldest and best equipped barbell company, BUR gives value and prices no one can equal.

SEND FOR FREE CATALOG.
BUR BARBELL CO.
Lyndhurst 5, New Jersey



I Made \$14,839 in 1 Year SERVICING RADIATORS!

Rex Ryan (Iowa) and hundreds of others earn \$8,000-\$20,000 a year servicing auto-truck-tractor radiators the Inland way. Inland, largest radiator servicing equipment mfr., offers the complete package—equipment, merchandising, "Pay-as-you-go" financing, and Free training school for customers.

WRITE for FREE Radiator Servicing Folder.

INLAND MFG. COMPANY

Dept. PS-2
1106 Jackson St., Omaha 9, Neb.

MAKE BIG MONEY AT HOME!

INVISIBLE REWEAVING

Pays up to \$10 in an Hour!

Make moth holes, cigarette burns, tears, rips, disappear from all fabrics. Little-known craft pays extra spare-time profits at home. Write today for exciting details FREE!

FABRICON 8342 S. Prairie Avenue
Dept. 552, Chicago 19, Ill.

NEW! PERSONAL RADIO



LISTEN WHILE YOU WALK, RIDE, WORK!

Slips in any pocket—Wt. only 7 ozs. Size 2 3/4" x 4 3/4" x 1 1/4". Beautiful Black Gold plastic case. NO HOOKUPS—NO WIRES—NO PLUG-INS! Self contained with 150 hour life battery.

GUARANTEED RECEPTION OF RADIO STATIONS TO 50 miles—up to 1500 miles for powerful stations! Has new Patented Super-regenerative Diode tube and transformer audio stages for sharp selectivity and sensitivity! Easy to use up controls, (while walking). Almost invisible plastic foam personal earplug lets you alone listen while you walk, work, ride or sleep—anytime—anywhere. **Money back guarantee—1 year service guarantee.**

SEND ONLY \$5.00 (Ck. Mo.) and pay postman \$14.95 plus postage on delivery or send \$19.95 for postpaid delivery. Get YOUR Tinytone HEAL pocket radio now and be ready to listen to Civil Defense alerts, news, music, sports, etc. on a moment's notice. Not an unworkable—incomplete kit or plaything! Shipped complete with batteries—Ready to listen! Available only from **WESTERN RADIO Dept. APS-2 Kearney, Nebraska**

Make SURE, SAFE INSULATED ELECTRICAL CONNECTIONS

The New SUPER ~~CHAMP~~ Hand Tool

The ONE Tool for ALL Wire Sizes used in Home Wiring, Appliances, Automobiles.

DOES ALL THESE THINGS BESIDES

CRIMPS Solderless Terminals and Connectors without solder or tape for safe connections.

CUTS Wire, making clean, sharp cut through insulation and Conductor.

STRIPS Wire sizes #22-#10. Gauges assure proper length for sure, safe crimp.

SHEARS Bolts and screws without damaging threads — no filing or hack sawing.



comes with
PRE-INSULATED



FREE with Each TOOL

ORDER DIRECT—USE COUPON

Satisfaction guaranteed or money back.
Send check or money order for \$3.95.
(Ohio residents add 12c sales tax.)

T. W. Berger, Inc.
National Distributor Consumers and Dealers
AIRCRAFT-MARINE PRODUCTS, Inc.
209 Mariemont Center Bldg., Cincinnati 27, Ohio

Only
\$3.95
Post Paid

T. W. Berger, Inc.
National Distributor Champ Tool
209 Mariemont Center Bldg., Cincinnati 27, Ohio
Send me post paid the new super Champ Hand Tool. I am enclosing \$3.95. (Ohio residents add 12c sales tax.)
☐ check ☐ money order

NAME _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

"TOOK IN \$217 FIRST 10 DAYS"

Some make more, some less
We help you to start Your
Own All-Year Business

Make Big Money! With our easily operated, highly efficient wall washer, Chas. Stelle took in \$217 gross in first ten days. E. L. Goss took in more than \$10,000 in one year. E. C. Taber wrote, "I made \$400 gross in two weeks." And no wonder—this machine washes walls 6 times faster and better than by hand. **Your Money-making Opportunity.** Enjoy independence—freedom from bosses, layoffs. Customers everywhere—homes, offices, schools, etc. Expenses low, profits high. No shop necessary; operate from home. Can start spare time until your full time is available.

Loss no time. Get all facts without obligation

FREE BOOK! MAIL COUPON TODAY!

- VON SCHRADER MFG. CO. •
- 211 "W" PL., Racine, Wisconsin •
- Send at once (no obligation) your **FREE** •
- booklet containing information about your •
- **WALL WASHING MACHINE** and how I can start •
- my own permanent, profitable business. •
- Name _____ •
- Address _____ •
- City _____ Zone _____ State _____ •



**DO YOU WANT
\$340-\$377
A MONTH**

PREPARE NOW For Next Civil Service Examinations

Men—Women

Postoffice Clerks—
Carriers
Railway Postal
Clerks
Stenographers
Accountants
Immigrant
Inspectors
Typists
Customs
Inspectors
Many Other
Early Jobs
**MAIL
COUPON
TODAY
SURE**

Franklin Institute
Dept. M-90
Rochester 4, N. Y.

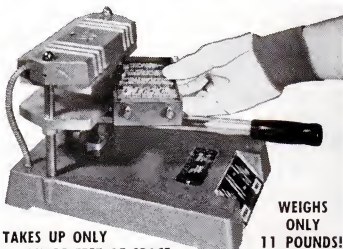
Sirs: Rush to me, **FREE** of charge, partial list of U. S. Civil Service big pay jobs. Send **FREE** 36-page illustrated booklet describing salaries, vacations, benefits, work, etc. Tell me how to prepare for one of these tests.

Name _____
Address _____ Age? _____

New Rubber Stamp Business Pays Beginners ^{UP} ^{TO} \$9.20 an hr.

Start at home in spare time with this little table top machine

The multi-million dollar Rubber Stamp Business—once controlled by a few big companies—is now being taken over by small home operators—one in each community throughout the U.S. Men and women who have this inexpensive machine can turn out huge quantities of Rubber Stamps with special wording that buyers once were forced to order from big cities. Material costing only 27c makes a stamp that sells for \$1.80. The machine that does the work is simple and easy to operate and it turns out as many as six Rubber Stamps at a time each with different wording such as names, addresses, notices, stock numbers, prices and other "copy" needed by offices, factories and individuals. Working full capacity, it can earn as much as \$9.20 an hour for the operator! Now you can get into the big-pay business yourself, with your own home as headquarters. You don't need any experience. We supply everything, including complete instructions and eight ways to get business coming in fast. Start making up to \$9.20 an hour from the very beginning. Cash in on the profitable Rubber Stamp Business in your community right away.



**TAKES UP ONLY
2 SQUARE FEET OF SPACE**

Read the complete and fascinating Rubber Stamp story in a big 110-page Book recently published by the Warner Electric Company. The book is profusely illustrated with more than 100 pictures and photographs. And you can read it for a full two weeks without risking a penny of your own money.

Here's what the new WARNER PLAN Tells You about Making Money with RUBBER STAMPS

CHAPTERS

1. HOW TO have fun now and at the same time provide for a secure and prosperous future.
2. HOW TO check the advantages of operating a Rubber Stamp Business in your own community.
3. HOW TO acquire a general knowledge of the business based on a brief history of the Rubber Stamp.
4. HOW TO visualize the scope of the Rubber Stamp market.
5. HOW TO make a Rubber Stamp (general outline).
6. HOW TO assess the value of Warner Equipment.
7. HOW TO get acquainted with the "Tools of your Trade."
8. HOW TO make a Rubber Stamp (Specific procedure).
9. HOW TO mount a vulcanized Rubber Stamp.
10. HOW TO make "Special" Rubber Stamps.
11. HOW TO cut plastic Matrix Board for the chase.
12. HOW TO get the right price for the Rubber Stamps you make.
13. HOW TO price your complete Rubber Stamp Line.
14. HOW TO figure costs so you will be sure of a substantial profit on all the work you turn out.
15. HOW TO set up your workshop.
16. HOW TO get the most out of Warner's "Eight Tested Sources for Getting Business."
17. HOW TO operate at peak efficiency when YOU ARE YOUR OWN BOSS.
18. HOW TO get started on a cash outlay so small that you can get back your entire investment inside of two weeks.

NEW WARNER SUCCESS PLAN

**Tells How to Build—Step by Step—to
big profits and Personal Independence
READ THIS PLAN FOR 2 WEEKS
ENTIRELY AT MY RISK.**



110 Pages
More Than 100
Pictures

Now Ready to Mail
Tell Me Where To
Send Your Copy
USE COUPON

In this amazing Plan you will find exact and detailed instructions for starting a Home Business in spare time—without giving up your present job and without risking the loss of a single pay check. The Warner Plan shows you—with pictures, photographs and drawings—just how to make Rubber Stamps just as good as those turned out by the big companies. It shows how to get orders without canvassing or house-to-house selling. It shows you how to expand, how to get others to work for you and how to be SURE of at least twice your present job for a life of personal independence. But don't make any decision now. Read the Plan first—entirely at my risk. Then—after you have made a careful investigation—after you have talked things over with your family—only then do you decide what you want to do.

The thing to do now is to get full details which I will send you FREE. No salesman will call to urge you to buy anything. Mail coupon today—or just send me a postcard—and I will see that complete information goes out to you by return mail—postage paid.

RUBBER STAMP DIVISION

1512 Jarvis Ave., Dept. R-32, Chicago 26, Illinois

RUBBER STAMP DIVISION
1512 Jarvis Avenue, Dept. R-32
Chicago 26, Illinois

**SEND NO
MONEY**

Please rush full particulars about the little machine that can get me started in the profitable Rubber Stamp Business at home in spare time. Everything you send me is FREE. No salesman will call.

Name _____

Address _____

City _____ Zone _____ State _____

WORLD'S GREATEST

CLASSIFIED

OPPORTUNITIES

Here are hundreds of opportunities offered especially to the readers of Popular Science Monthly. Read them. Answer them! You can make and save money.

POPULAR SCIENCE MONTHLY - 353 FOURTH AVE. - NEW YORK CITY 10

Classified Ads only \$1.00 per word insertion, payable in advance. Minimum ad 10 words. To be included in April issue, copy should be in our office by February 24. No cancellations accepted after February 15th. Address orders to O. K. Kelly, Classified Ad Mgr.

1 AUTOMOBILES & MIDGET CARS

HUNDREDS of automobile catalogs—American, antique, foreign; Dealer Books, glossy photographs, shop manuals; Free motor Magazines—offered by non-profit club. Write immediately; Get on free mailing list. Auto Maniacs, Inc., Stockbridge, Michigan.

AIRCooled engines 1.6 HP new \$54.50 now \$27.50. Many others. List 25c. Donz, Mt. Ephraim, N. J.

BUY surplus cars, jeeps, direct from government. List \$1.00. Box 10423, Hartford 1, Conn.

ANTIQUE Automobile color slides, 2x2. Illustrated catalog Free. Universal, Box 7793, Beverly Hills, Calif.

ENGINES, Wheels & Equipment for midget cars \$10.00 up. Cauffiel Motors, Temperance, Michigan.

MIDGET auto plans \$1.25—buy our plans. Gilmore, Box 26, Bowling Green, Ohio.

2 AUTO SUPPLIES & EQUIPMENT

AUTO Accessory & Parts Catalog, 1956 edition—All New! 164 pages. Save up to 50%—over 50,000 items, including Hollywood Accessories, Hi-Speed Equipment, Rebuilt Engines, all parts and accessories for all cars and trucks! Hard-To-Get parts! Send 25c (refundable). J. C. Whitney, 1919-PS Archer, Chicago 16, Illinois.

FREE Discount catalog—Speed, power, custom equipment. Almqvist Engineering, Milford 3, Pennsylvania.

BUY Wholesale nationally advertised auto supplies, thousands other products at big discount. Free "Wholesale Plan," American Buyers' Hertel Station, Buffalo 16-Si, N. Y.

LATEST Custom accessories... items not in stores. New low prices. Continental tires, push-button doors, trunks, etc. New illustrated catalog, biggest ever, 25c. Eastern Auto, 3319-D South Grand, Los Angeles 7, California.

SAVE engine—fuel—mileage. Six cylinder type, \$1.00. Atomizer, Room 20, 1240 Bannock Street, Denver 4, Colorado.

ALLIANCE automatic garage door operators, \$69.95 up. 2400, faster service, still yourself, save \$70.00. Write AA Controls, 5633 Little Sugar Creek Road, Dayton 10, Ohio.

FREE Illustrated, descriptive information "The Truth About Water Injection," Injector, Box 526, Burbank, California.

TAPET noises in Fords, Chevrolets and Mercurs stopped with our silencers. Literature, Kaye Products, 2067C S. Layton Blvd., Milwaukee 15, Wisconsin.

BRIT Rest-A-Leg, 100% guaranteed from driving strain, no drilling, faster service, remit by postal \$4.95 P.F. T. G. Haines, 2509 Circle Drive, St. Louis 17, Missouri.

ELECTROPLATE autopaarts, novelties, mirrors, Easy inexpensive home processes. Free booklet, Tyco Metals, Box 13231-PC, Houston 19, Texas.

JEOP Owners—V8 Power. Read Jeep Owners ad, Page 207.

DISCARDED GM71-10 Injector Parts Wanted. Bonus on HV. Mayer, 7120 Carnegie, Cleveland 3, Ohio.

RADIOs Custom for 1952-3-4-5-6 Fords \$29.00. Free literature, Nordic Radio, Box 682, Evanston, Illinois.

USE THIS HANDY INDEX TO FIND WHAT YOU WANT

Advertising, Agencies for Advertisers.....	33
Agents Wanted.....	43
Authors, Books & Indian Goods.....	49
Artists Supplies.....	76
Automobiles & Equipment.....	52
Auto Trailers.....	3
Automobiles, Midget Cars.....	5
Aviation.....	5
Batteries, Generators, Etc.....	6
Boats, Outboard Motors.....	11
Body-Building Courses, Jiu Jitsu, Etc.....	12
Books & Calendars.....	13
Build It Yourself.....	66
Business Opportunities.....	37
Business Service, Information, Name Lists.....	50
Cameras, Photo Supplies.....	34
Camping Equipment & Tents.....	14
Cartooning, Sign Painting, Chalk Talks.....	45
Ceramics.....	25
Chain Investigators.....	37A
Coins & Currency.....	26
Contests.....	46
Detectives.....	47
Dogs, Birds, Hamsters & Pets.....	17
Educational & Instruction.....	43
Electrical Supplies & Equipment.....	10
Engraving, Motors, Etc.....	10
Farms, Other Real Estate.....	19
Field Glasses, Telescopes.....	14
For Inventors.....	37
For Sale Miscellaneous.....	1
For the Home.....	38
Formulas, Plans, Etc.....	39
Free Mail-Ing.....	18
Games & Entertainment.....	24A
Gelco Counters, Treasure Finders.....	77
Help Wanted.....	42
High-grade Salesmen.....	44
Hobbies, Collections.....	61
Home Craftsmen.....	43
Hypnotism.....	64
Inventions Wanted.....	21
Language Outfits.....	8
Machinery, Tool Supplies, Etc.....	9
Marie Tricks, Puzzles, Etc.....	39
Manufacturing.....	63
Minerals & Precious Stones.....	30
Miscellaneous.....	70
Models, Model Supplies.....	84
Nonmaking Opportunities.....	31
Movie Pictures, Slides, Sound Equip.....	38
Music, Records & Supplies.....	35
Music, Song Writers & Records.....	35
Of Interest To Women.....	70
Old Gold, Jewelry, Watches.....	57
Old Stamps Wanted.....	27
Patent Attorneys.....	59
Patents For Sale.....	62
Plays, Stories, Etc.....	49
Photo Finishing, Photocopies, Etc.....	32
Plastics.....	49
Poultry & Supplies.....	21
Printing.....	22
Printing Outfits, Supplies.....	28
Receptions.....	22
Radio, TV, Supplies & Equipment.....	30
Razor Blades, Shavers.....	74
Rubber Stamps & Office Supplies.....	56
Special Services.....	51
Sporting Goods, Guns, Fishing Tackle, Stamp Collecting.....	15
Tattooing Supplies.....	28
Tobacco & Pipes.....	68
Trees, Shrubs, Roots & Herbs.....	20
Type-Writers & Office Machines.....	50
Wanted To Buy.....	72
Water Heating.....	78
Welding, Soldering.....	8

CARPORTS, Patio roofs, Partitions. Build them yourself with beautiful Fiberglass "Planks." Details Free. Concourse, 4004 Dyre, New York 66, N. Y.

MOTORIST protect your engine insert magnetic disc in your oil filter \$1.50. Art & George Co., 5170 No. Hollywood Avenue, Milwaukee 17, Wisconsin.

CAR lost its pep? Burning Oil? "Ring-Seal" restores new car performance. \$2.95. Free literature. Automotive Products, 122 W. North Avenue, Baltimore 17, Maryland.

SENSATIONAL GE-Subzero Auto Engine Heater starts coldest cars, trucks, tractors immediately. Save \$3.95 (regularly \$8.95). Order for yourself, sell others locally and mailorder. Huge profits. Terrific quantity discounts. Act Now! Wisniewski Inc., PS, Milwaukee 7, Wisconsin.

AUTOMOBILE compasses: Postcard brings literature on all major makes. Paul L. Howland, Wichita 4, Kansas.

BUY Wholesale, 750,000 Products. Details Free. Carter, Box 6011-EE, Chicago 80.

(GERMAN Bosch) sparkplugs \$.85 each postpaid for automobiles, trucks, tractors, motorcycles, etc. etc. Howard Werts, LaSalle, Illinois.

3 AUTO TRAILERS

EXCEPTIONAL Expanding eight foot trailer, comes with family of five. Build Yourself—literature, 10c. Framar Company, Wilmington, Mass.

4 MOTORCYCLES, BICYCLES AND SUPPLIES

RECONDITIONED Motorcycles and motors. Chromium accessories. Complete stock Indian parts. Expert rebuilding. Fast service. Indian Motorcycle Sales, Kansas City 27, Missouri.

WHIZZER motorbike engine \$5; Midget car \$25; Micromid racer \$65; Briggs Wagonmole \$19; Doodlebug motorcycler \$15; (Mailorder only). Send 25c (35c for First Class Mailing) for Directory-Gallopue Number 99. Listing these and hundreds of other bargains. Midget Motors Directory, Athens, Ohio.

SERVICECYCLE \$20.00; Whizzer Motorbike \$25.00; Customer's scooter \$25.00; midget auto \$25.00. Rush 25c (35c first class mail) for new catalog #958 listing many other amazing bargains in motors, midget cars, motorcooters, motorbikes, construction plans. Associated, Box 534, Toledo, Ohio.

REBUILT 1½ to 3 H.P. engines \$9.00 up. Cauffiel Motors, Temperance, Michigan.

5 AVIATION

AVIATION Surplus Bargain Catalogue. One Dime, Box 2263, Thomsville, Penna.

EXPERIMENTAL rotor blades for ram or pulse jet helicopter, build own. Complete plans and instructions, including photograph, \$1.50. Richard Curry, 6242 E. 26th Street, Tucson, Arizona.

BUILD one-man Helicopter. Specifications \$1.00. Complete plans \$8.00. Apache Aircraft, St. Louis 17, Missouri.

BUILD a map carrying helicopter Jet Engine Yourself! "Practical Ram Jet Design" \$1.00. "Practical Pulse Jet Design" \$1.00. Also Centrifugal Propulsion Details \$1.00 or Cyclic Propulsion Details \$1.00. Decker Engine Works, Plasterco, Virginia.

POPULAR SCIENCE OPPORTUNITIES

HELICOPTERS. 1 and 3 man aviation marvels. Construct own. Instructions \$3.50, \$6.00, respectively. Mayberry Aircraft. Box 343, St. Clair Shores, Michigan.

BUILD a fast, safe, aircraft or snow sled from your 45-200 H.P. aircraft engine. Propellers, Plans, Supplies. Satisfaction guaranteed. 48 page catalog. 25. Box Maxwell Co., Box 33012, Ft. Worth 5, Texas.

6 BATTERIES, GENERATORS, ETC.

EDISON Nickel Storage Batteries. Any voltage, any amperage. Unconditionally guaranteed. Power Plants, Generators, Batteries. Literature. Hawley Smith Co., Croton Falls 2, New York.

7 ELECTRICAL SUPPLIES & EQUIPMENT

ELECTROPLATING equipment, anodes and solutions for all types of plating. Instructions. Assemble your own plater and save. Free Catalog. Ramer, Dept. E-2, 1601 East First Street, Los Angeles 33, California.

LAMPS—25c brings bargain catalog showing all parts for repriming, bulbs. Contains instructions for electrifying vases, oil lamps, etc. Gyro Lamps, 5402B Clark, Chicago 40.

TELEPHONE transmitter. Hand set type. Suitable for inter-house phones, speakers or any communication purpose. Delivered two for \$1.00. No C.O.D.'s. Telephones, Dept. C-256, 1700 Lunt, Chicago 26.

ELECTRIC Pencil: Engraves all Metals. \$1.50. Beyer Mfg., 10511-C Springfield, Chicago 43.

8 WELDING, SOLDERING

"BUILD-UP-OWN" a.c. welder and a.c. power plant with a good used engine and low cost Hobart generator. Welds anywhere and supplies 5kW stand-by power for any emergency. Write Hobart Weld, Dept. 263, Troy, Ohio.

BUY welding supplies direct from manufacturer. Cable, welding rods, helmets, etc. Portable arc-welders and kits at tremendous savings. Free factory catalog! Levey, Minneapolis, Minnesota.

NEW "all-in-one" oxy-acetylene outfit welds sheet, plate; cuts heavy steel; heats; brazes. Uses interchangeable tips. Portable, easy to operate. Complete with instructions. \$76.50. Gas cylinders on special money-saving plan. Write for free information: Dept. 8, Linde Air Products Company, 30 East 42nd Street, New York 17, N. Y.

ACETYLENE Welding outfits now \$49.00, used \$29.00. Argweiders \$56.50. Eagle Welding, Dept. 42, 5085 Broadway, Chicago 40, Ill.

WELDERS, 110/220, Welds 1/2", \$39.50. Morris, 1070 Inner Drive, Schenectady, New York.

BUILD 300-ampere Welder using aircraft generator. Plans 10c including Bix Bore welding kit, generator, hydraulic, winches, etc. Dunbar Mfg., 5610 Sylvan, Houston 23, Texas.

9 MACHINERY, TOOL SUPPLIES, ETC.

SHARPEN Your Disc without taking it apart. For details write Allied Equipment Co., Box 83, Bloomington, Illinois.

BIG Factory Catalog! Buy direct—Save Middleman's profits; hundreds of labor saving tools and equipment—tremendous savings. Send 10c. Master Mechanic Mfg. Dept. CI-110, Burlington, Wisconsin.

SURPLUS Aircraft rivet guns. Pistol grip. Factory rebuilt! \$30.00 postpaid. Leo Bix, 3670 S.W. 23rd Terrace, Miami, Florida.

JEEP OWNERS—V8 Power. Read Jeep Owners ad. Page 307.

LAWN MOWER grinder. New fast, different. Write: Turner-Cline, 430 Yellowstone, Pocatello, Idaho.

AIR compressor. Build yourself. Circular AC-4. Little Machines, Hamilton, Michigan.

MILLING Machines: Horizontal & Vertical Bench types. 6" to 18" Table Travel. Amazing low prices. Literature Free. Southern Machine Tool Co., Conyers 4, Georgia.

TURN your electric drill into complete shop. Seventeen operations. Low cost. Free circular. Multi-Tool, Gen. Del., Broadwood Sta., New Orleans, Louisiana.

10 ENGINES, MOTORS, ETC.

WINDING Data, listing 225 motors, single and three phase. \$1.00. Motor Data, Box 7631, Kansas City 28, Mo.

1 1/2 H.P. Electric Motors \$8.00 F.O.B. 1 1/2 H.P. \$12.00 F.O.B. All reconducted G.S. Westinghouse, Delco, Emerson, 10 Vols. 60 cycles, A.C. 1725 R.P.M., 1 1/2" Shaft. See balance C.O.D. Wall's Motors, 5 Gaston St., Roxbury, Mass.

PARTS For Briggs Stratton, Clinton, Lauson, Power Products, Wisconsin, Continental Engines. Weeden Company, Wakefield, E.I.

REWIND Motors yourself. Complete instructions \$1.00. Lewis Mfg., Howell 11, Michigan.

REBUILD 1 1/2 to 3 H.P. engines \$9.00 up. Caulfield Motors, Temperance, Michigan.

11 BOATS, OUTBOARD MOTORS

NEW, used rebuilt marine motors. Marine conversions, fittings. Free Catalog. Stokes Marine Supply, Dept. 23, Coldwater, E.I.

FREE Catalog! Boat Kits, Trailers, Fiberglass, Marine Hardware. Luger Industries, Dept. K, 4452 Nicollet, Minneapolis, Minnesota.

BUY Wholesale nationally advertised outdoor, thousands other products at big discount. Free "Wholesale Plan." American Buyers', Hertel Station, Buffalo 16-TL, N. Y.

FULL size, cut-to-shape Boat Patterns. Blueprint, 7 1/2-38 feet. New 1956 illustrated "Build A Boat" catalog of 50 naval architect-designed Cruisers, Runabouts, Sloops, Skiffs, Outboard Boat Sailing, Racing, Houseboats, 50c. Small Boat Hardware Catalog, \$1.50. Bigger, better 1956 "Build A Boat" Catalog, \$2.50. Cleveland Boat Blueprint Co., Dept. A-77, Box 1651, Cleveland 4, Ohio.

WHOLESALE! Sea Legs Boat Kits, factory prices \$1.98. Savings 15-25%. Free, printed framed, pre-cut parts. Illustrated instructions. Penney Woodcraft Industries, Dept. C-51, Defiance, Ohio.

FREE instructions, Boat Docks. Built, installed, guaranteed. Free information. Company, 3422 26th Avenue South, Minneapolis, Minnesota.

OUTBOARD Motor Parts—Used—For All Makes. Send list of parts needed. Enclose stamp. We save you money. Outboard Motor Mart, Inc., 2295 State Street, Boston, Mass.

BOAT Plans, Patterns, Frame Kits, Modern inboards and outboards 11-22 for amateur builders. State requirements or send 40c for complete Catalog. Glen Martin, Box 568, Compton, California.

MARINE conversions for Ford and Jeep. Plans, 25c. Let's Learn Boat Manufacturing Co., 972A Broad St., Newark 2, N.J.

AIRPLANE Floats, Pontoons, Rubber Boats. Catalogue 10c. Box 2286, Thomasville, Penna.

PLANS, Patterns, Frame—Boat—Trailer Kits. Hardware Catalog 50c. (refundable). Marinecraft, Box 161-B, Brighton, Mass.

NEW! High performance kit boats anyone can build, paint, fiberglass, boat hardware and accessories. Catalog 35c. Marine Associates, Box 6188SF, Long Beach 11, California.

OUTBOARD Motors, brand new, big diesel, best deal, list 25c. Donz, Mt. Ephraim, N. J.

ALUMINUM Boats—Grumman lifetime aircraft construction. More pleasure—less maintenance. Free Catalog—Boats or Canoes. Metal Boat Company, 36 South, Marathon, New York.

BOAT plans: Welded steel, wood, plywood. Inboards, cruisers, sail. Free Literature—Plans specify size, type. John B. Clark, N.A., Box 51, Bay Village, Ohio.

FIBERGLASS Top marine grade. Yard or kit. Ontario Fiberglass Co., Ontario, New York.

FIBERGLAS boat coating. Plexiglas boat windshield—clear, blue, green, tinted. Wholesale—retail. Complete information catalog—15c. Gem-O-Lite, Box 6863, North Hollywood, California.

12 BODY-BUILDING COURSES, JIU JITSU & ATHLETIC EQUIPMENT

BUILD powerful arms, chest, shoulders! 22 exercises, 21. Fonsad, Box 601-C, 1100 Market, Wilmington 99, Delaware.

100 TRICK Knockouts for self defense \$1—1c each. Friest, Box 251, Evanston 2, Illinois.

MEASURE Taller! Coach's "Inch-At-A-Time" System, \$1.00. Marty Snyder, Box 189, 30th and Fallsdale, Union City, N. J.

MEN! Look! Muscle development! While sitting and standing! Simple Unit, method of "Applied Pressure." No equipment. Complete illustrated booklet \$2.00. Guaranteed satisfaction! Mathias, Box 206-S, Miami 47, Florida.

PUSHED around? Why take nonsense from Bullies! Give them the surprise of their lives. Easy! Write How Police Jiu Jitsu. Complete fully illustrated course in one volume same as taught police and armed forces. Send \$1 now for Police Jiu Jitsu postpaid. Satisfaction guaranteed. Books Publishing Company, Amityville 2, New York.

BARBELLS, Dumbbells, Exercise equipment. Courses. Free booklet. Good Barbell Co., Reading, Penna.

14 FIELD GLASSES, TELESCOPES

SAVE 25%! America's largest selection. Free 55 page 1956 Binocular Catalog. \$3.95 to \$250.00. Write for Selection. Western, A-2516, Chicago 20, Dealers Wanted.

BUILD your own Reflector Telescope. Complete kit: Mirrors, Eyepieces, Tripod, all other accessories. Send for illustrated literature. Criterion Manufacturing, Dept. KP-16, Hartford, Connecticut.

FREE Catalog! Thousands war surplus optical bargains. Lenses, Prismas, Telescopes, Binoculars, etc. Send \$1.00 for 10 Lens Hobbyist Set and Project booklet. C. Jaegers, 69 West Merrick Road, Lynbrook, New York.

REFLECTOR Telescope Kits \$6.25 (3") to \$175 (12"). Mirrors, Cells, Focusing Mounts, Tripods, Eye-Systems, Anything, everything in field of Reflectors. Free literature. Catalog. Also ready to use telescopes from \$25. to \$175. Inquiries to Esco Products, 1428 Wilbur, Hoboken, N. J. Sales Showroom, 166 Church St., N.Y.C.

WAR Surplus bargains! Millions of lenses, instruments, telescopes, binoculars, components and complete line of astronomical telescope items. World's greatest optical market place! Send only 10c for beginner's 10-lens kit and big instruction booklet. Stock 2-New-CN. Write for catalog—CN Free! Edmund Scientific Corp., Barrington, New Jersey.

REFLECTING Telescopes, completely assembled. 60X, \$29.75. Guaranteed Observatory clearness. Free information. Skyscope, 475 Fifth Avenue, New York 17.

DYNASCOP—Sensational New Reflector Telescope. Send for details. Criterion Optical, Dept. DS-22, Hartford, Connecticut.

6 THUMBS on each hand? Even you can assemble our Telescope Kits from our easy instructions. Enjoy the heavens with high priced telescope assembled in less than an hour. You'll like our complete line of telescopes, microscopes and accessories. Write for free information, or free catalog T of finest quality and newest design astronomical kits or free Catalog M of microscopes. Optical Engineering Co., 164-19 Northern Boulevard, Dept. PS, Flushing, New York.

AMAZING prices binoculars, gunscoptes. Free info. For New York Selection, write for catalog free. Prentiss Importers, Mercury Bldg., West Los Angeles 25, California.

MAKE 6" Telescope reflector. Glass, abrasives, instructions. Send \$1.00. Cameron, Box 65, Inwood 96, New York.

ASTRONOMICAL Books, Star-Atlases, free list. Herbert Luft, 42-10 82nd Street, Elmhurst 4, N.Y.

400X TELESCOPE easily made. Kit includes focusing tube, erector, five finished lenses and building instructions—\$3.75. Grant astronomical telescopes completely assembled with tripod—\$15.00. Free information! Suffolk Science, Mattituck 4, New York.

BINOCULARS, telescopes, microscopes. Terrific values \$3.98 up. Request free money-saving catalog. Criterion, Dept. 839, Hartford, Connecticut.

FREE "45,000-\$45,000; Unlimited Vacations." Work home. No merchandise, equipment. Irving-P.S., Chatsworth, Calif.
\$150 Weekly—easy! Start home Venetian Blind Laundry. Revealing book free. A. V. Co., 110 S. 44th, Philadelphia 4, Penna.
MUSHROOM Spawns plus manureless, virus products. \$200. Chatsworth, 64 South 19th, Newark 3, New Jersey.

23 BOOKS & MAGAZINES

SOCIALIST Books, Catalog, literature, Free. New York Labor News Company, Dept. F, 61 Cliff Street, New York 38, N.Y.
BOOKHUNTERS! All Subjects. Send Wants! Jaher Book Service, 183 Hazewood Drive, Westbury, New York.
EIGHT quarter pocket novels \$1.00. List for stamp. Trunkat, Glenshaw, Penna.
ATHEIST Books. Catalogue free. Truth Seeker Co., 38 Park Row, New York 8.

BRITISH Books—All Subjects. Catalog 10c. Wants solicited. Transbooks, Box 22-PS, Brooklyn 26, N.Y.

SPARETIME Profits taking Subscriptions. All Magazines. Wholesale Catalog. Free. Cassell Publishers, DeLa Westfield, Conn.

\$1.00 BOOK teaches you to calculate and read numbers from three inches to a mile long. World's Highest Calculator, 295 Clinton Street, Easthampton, Mass.

BOOKS. Free 1956 catalog, 100 pages. Text, vocational, educational. Instructional Books. Millions of volumes, new and used. Bargain prices. Book bought. Est. 1902. Long's College Book Co., Dept. PS, Columbus 1, Ohio.

BOOKS, magazines, pictures, slides, movies. Please indicate subjects desired. Eladio, Apartado 3498, Havana, Cuba.

NATIONAL Geographic Magazines 1888-1932. Any issue. Periodical Service. Box 464, PS, Wilmington, Delaware.

BOOK Catalog, 1000 interesting titles, send 10c. Books Publishing Company, Amityville 2, New York.

MOLIN'S Out of Print Books, 7407 Park Avenue, North Bergen, New Jersey.

LIFE after death? One possibility. Only 50c. Behrns, 2626 Bartlett Street, Oakland 2, California.

24 HYPNOTISM

FREE Illustrated Hypnotism. Self-hypnosis. Catalogue. Write: Hypnotist, 1324 Wilschire, Hollywood 17, California.

HYPNOTISM. Free literature. Conditions. Nurse Dielh, Post Office Box 2002, Seattle, Washington.

FREE literature; Hypnotism, Autohypnosis, Mechanical Hypnosis. Revealed by scientists. Hypl, Box 6097, Oklahoma City 11, Oklahoma.

FIRST correspondence school—ten weeks—sample lesson \$1.00—Vinefs, Box 301, Boston 1, Massachusetts.

"MECHANICAL Hypnotist." New "Pocket-Size" invention causes trance—sample, quickly. Also 32 page book—Command others. No harmful habits, entertain, instantaneous Hypnosis, etc., \$1.98. Must work or Money Back. Post-way, 2-PS, 30 East 20th, New York City.

EFFORTLESSLY overpower others! Spelbinding record, "Zombie Power," teaches hypnotist's enslaving words. Transfixes eyes, cost \$2.00. Grauer, 210 5th Avenue, New York 10.

MASTER Hypnotism in 25 Lessons, complete easily learned fascinating course in one volume. \$1 postpaid, plain wrapper. Satisfaction or dollar refunded. Books Publishing Co., Amityville 2, New York.

STUDY Hypnotism! Amazing illustrated lessons. Big 80-page treatise jam-packed with fascinating information. Simple understandable language you'll enjoy. Full price only \$2.95 postpaid. C. O. D. Plus Postage. Satisfaction or refund guaranteed. Order "Hypnotism" today. Nelson Company, 610 South Clinton, Dept. 2BU-1, Chicago 6.

HYPNOTIZE Successfully! Learn easy, fast, modern methods—including secret nerve pressure (no harmful hypnotic harmies!) Complete illustrated course \$1.00. H. Fowler, 1223 Dahlia Lane, Wantagh, N. Y.

HYPNOTISM, Autohypnosis books, recordings. Free catalogs. Speedy Mailers, Appalachia, Virginia.

PROFESSIONAL School offers complete course hypnotism! Auto suggestion—our own patent—Future self gadgets and books. Modern School, 6252 Woodman, Van Nuys, California.

EX-Ray Mind! Hypnotize, one glance. Gougeon, \$3.00. Wamater, Box 10, Ottery, Cape, South Africa.

25 MAGIC TRICKS, PUZZLES, ETC.

BEST magic. Joker's novelties. Lower prices. Catalog 10c. Top Hat, Evanston 13, Illinois.

500 TRICKS, Douglas famous Catalog, 10c. Fastest magic service for 30 years. Douglas Magician, 21 Dallas, Texas.

3100 NOVELTIES, Jokes, Tricks, Gadgets, Funmakers, Hobbies. Big catalog 10c. Johnson-Smith, D-233, Detroit 7.

MAGICIANS, Gambiers exposed, 10c catalog. Book, Box 571, St. Louis 1, Mo.

LEARN Ventriloquism, easiest method, free particulars. Smith, 801 Bigelow, Peoria, Illinois.

LARGE professional magic catalog, \$1.00. Free dollar mystery card, airtight case. H. Seitzer, 1639 Fulton Avenue, Bronx 57, New York.

LEARN Magic, 122 easy lessons, 25c. A. Nation, Pleasanton, Kansas.

TRICK Novelties wholesale. Write Bender Sales, Box 45, South Houston, Texas.

GO Ventriloquist, all secrets told. Make money, surprise friends. Send 35c for information. Free 3 catalog of dummies, dialogues, etc. Limited supply. Gough, R. 3, Hartford City, Indiana.

FREE 50c trick and \$1.00 catalog. Send only 10c. Terry Magic Studio, 1921 66th Street, Brooklyn 4, New York.

SENSATIONAL Magician's Wand (Vanishes Handkerchief), 25c, catalog included. Box 133, New Philadelphia, Ohio.

"SVENGLAI Deck" trick cards 50c with catalog, 1746-S Market, Philadelphia 3c.

SMOKEBOMBS 25c, 7 for \$1.00. (Ter-rific) 4463-PS Greene, Philadelphia 44.

VENTRILLO, Professional Voice Thrower and Catalog 35c. Box 971-PS, Philadelphia 5.

DOLLAR Magic Set Free with Catalog 25c. 4462-PS Germantown, Philadelphia.

BE a Magician! Large professional catalog, 10c. 17 Tricks. Box 108, New Dearborn, Chicago 2, Illinois.

SENSATIONAL Life-Like Multiplying Rabbits Trick 50c Simple 1.00. Box 75, Universal City, Calif.

MECHANICAL joker, novelty information 10c. Enterprisers, 901-P S. 12th, San Jose 12, California.

26 COINS & CURRENCY

GET Profit and Pleasure in collecting old coins. Send 10c for 50-page illustrated coin catalog. You'll be delighted with it. Send for it now. Max Meli, 374 Men Building, Fort Worth, Texas. Largest rare coin establishment in U.S. Established 30 years.

FREE! Foreign coin banknote and Coin Collectors' Illustrated Catalog to approval of applicants. Send 3c postage. Taham, Coin Co., Springfield, Mass.

OLD Money Wanted. Do you know that Coin Collectors pay up to \$100.00 for certain U.S. Coins? And high premiums for rare coins? We buy all kinds. Send 4c for Large Coin Folder. May mean much profit to you. Numismatic Co., Dept. 30, Fort Worth, Texas.

101 DIFFERENT Foreign Bills—\$1.00. Postpaid. Dwight Musser, Dunbar, West Virginia.

EIGHT different Liberty Bells \$1.00. Sample Magazine, 160 pages. Sample 35c. Numismatic, 7320 Milwaukee, Chicago 31.

MORGAN Dollars: 1878-79-80-81-82 uncirculated \$2.00 ea. Illustrated coin catalogue 25c. Shultz, Salt Lake 10, Utah.

FIVE different Canadian Large Cents, 60c. Six different U.S. Indian Cents \$1.00. Our price list. U.S. and foreign coins included with order. Bryson Stamp Company, 612 White, Toledo 5, Ohio.

\$50.00 FOR certain Lincoln pennies. Indianapolis \$100.00. Booklet showing prices paid. 25c. Lincoln Coins D-4, Glendale, Arizona.

100 DIFFERENT Selected coins \$1.00. Okeon, Box 42, St. Louis, Missouri.

FIFTY Indian cents \$2.00. Savers, 1000 East Anna, Johnson City, Tennessee.

\$3,000.00 FOR 1913 Liberty Head Nickel. Dimes 1894-S, 1895-O, 1916-D. Quarters 1927, 1896-S, 1901-S, 1913-S, 1923-S. We pay \$5.00 to \$15,000.00. Certain dates—Lincoln Cents, \$60.00. Indianheads, \$60.00. Large Cent, \$200.00. Cents, \$200.00. 2c Pieces, \$45.00. 3c Pieces, \$60.00. Half-dimes, \$500.00. Shield Nickels, \$100.00. Old Dimes, \$60.00. 1875 Canadian Quarter, \$50.00. Hundreds of other worth \$5.00—\$500.00. Wanted—Half Dollars, Dollars, Gold Coins, Paper Money, etc. Know their values. Send for our large illustrated Guarantee Buying-Selling Catalogue, giving complete alcoin information—send \$1.00. Catalogue money refundable. Worth-coin Corporation, Leaders Numismatic Quotations (K-137-C), Boston 8, Mass.

INDIAN Cent with bargain lists 10c. Hutchinson, 3463 "I" Street, Philadelphia 34, Penna.

16 PAGE U.S. Coin List 10c. Stone Coin, 169-S Washington, Boston 6, Mass.

LARGE dollar bill \$2.50. Retail Guide-book \$1.75. Giant bargain catalogue 35c. Beebe's, 4514 North 30th, Omaha 11, Nebr.

FIFTY 2½ x 2½ c. coin envelopes with both sides waste. Economy Sales, 156-A Dean, Mansfield, Mass.

27 OLD STAMPS WANTED

I Will pay \$100.00 each for 1924 1c green and 1924 1c red stamps, or eleven (up to \$100.00 each unused). Send 10c for Large illustrated folders showing Amazing prices paid for old stamps. In-cludes Scheuerer, PS-62, 100 Berkshire, Rockville Centre, New York.

28 STAMP COLLECTING

TWO \$5.00 U.S. stamps plus 20 different, 10c with U.S. approvals. Irwin Stamp Co., Box 1109, Brooklyn 30, New York.

WEIRD Diamond Shape Coffee Stamps, lovely Flower Triangle. First American Big Commercial Greenland 10c. Danc-er, etc. Free with approvals. Capital Stamps, Little Rock 10, Arkansas.

AMAZING Offer! 200 U.S. stamps—include 10c. Big bargain lists with approvals included. Jamestown Stamp, Dept. APSC, Jamestown, New York.

WOW! 135 All Different Germany 10c! Zeppelins, Semi-Postals, Airmails, High Values. Big bargain lists with approvals included. Jamestown Stamp, Dept. APSC, Jamestown, New York.

300 DIFF. World wide 25c. Plus surprise packet. Mammoth packet list free. Econo-packets, Box 168, Riverside 22, Calif.

ADD 10,000 different stamps of the World to your collection for less than 1/2c each. \$5. down. \$4.25 month brings you book of 1000 each month for ten months. I. Huppert, 1972 East 18th Street, Brooklyn 29, New York.

50 DIFFERENT U.S. 5c with bargain approvals, list. Bookman, Box 8245-S, Madeira Beach, Fla.

U.S. Classics—Over 50 Yrs. Old. 15 Selected oldtimers. Missing in biggest col-lection. All sent with beautiful ap-provals. Jaro, Box 246-P, New York 8.

225 STAMPS For only 10c! This mam-moth stamp includes Airmails, Pictorial stamps from strange Countries catalogu-ing up to 25c each! Also Approvals. Mys-tic Stamp Company, Jamestown, N. Y.

100 DIFF. Latin America 25c. Packet list free. Econopackets, Box 168, Riverside 22, Calif.

FREE! Catalog! About stamps. Illus-trated. Free! The Stampmart, Hartford 1, Conn.

UNITED States commemorative col-lection containing 33 different—10c ap-provals. White, 516-W Avenue L, Brooklyn 30, New York.

FIRST U.S. Set. Among World's Preti-est. Only 10c Approvals. Welles, Box 1246-V, New York City 8.

FREE! Giant Catalog Offering thou-sands of stamps. Sent with beautiful ap-provals. Jamestown Stamp Co., Dept. EPSC, Jamestown, New York.

50 DIFFERENT A-Z Countries 3c, Aby-sinian-Zanzibar 10c. Approvals, 10c. 10c. Avion Stamp Co., Dept. S, Springfield, Mass.

APPROVALS attractively priced for ad-vanced collectors. Econopackets, Box 168, Riverside 22, California.

76 POPULAR SCIENCE

POPULAR SCIENCE OPPORTUNITIES

FREE U.S. Stamps. 1943 Occupied Nations. Air, Airmails. Commemorative Included in Collection. 25 Different U.S. Plus \$5.00 Stamp. Everything for 10c Mailing charge. Approvals. Willett Stamps, 1417 E. Main St., Mount Kisco, N. Y.

WORLD'S Largest Stamp (13 1/4 inches). A real curiosity! Retail for 50c, only 3c to approval applicants. Tatham Stamp Co., Springfield 50, Mass.

FREE! Surplus packet with approvals. Pioneer, Box 414M, Pasadena, California.

FREE Giant American Flag stamp. Others. Approvals. William, Box 34A, Diamond, Tenn.

90,000 STAMPS Disposal sale: Graceland 40c. Big lot \$1. Extra Special \$2. Giant Assortment \$5. You'll receive more than you expect for your money. Persil, 436 N.Y. Ave., Brooklyn 25, New York.

CANADA-Newfoundland collection including early issues, commemoratives, pictorials and high values. Plus interesting triangle stamps. Plus set of unused British Colonies. Plus large stamp book. All four offers free. Send 10c to post office. Empire Stamp Co., Dept. 1R, Toronto, Canada.

FREE: Mint British Colonies from Brunei, Papua, New Guinea, Ceylon, Gilbert, Ellice, Seychelles, Grenada. Free with approvals. Viking, Great Neck 5, New York.

KOREA Flowers. Formosa Chiang Kai-shek birthday issue. Hungary pictorials. Ceylon (elephant) Royal Visit. South Africa Cape of Good Hope triangle Centennial. Italian Colony flowers. Plus 10-color maps. African wild animal set. Many more beauties. All for 25c with interesting approvals. Every continent represented in this collection. Modern Stamp Co., Dept. B-3, Ferrysburg, Michigan.

FREE! 107 British Colony Stamps. All different. From Britain's farthest colonial empire. Catalog value \$2.50. Free Stamp Magazine. Approvals. Send 10c for handling. Act now! Niagara Stamp Co., St. Catharines 72, Ontario.

FREE. Scott's International Album. Other Premiums. Details With Approvals. Bannan, 35-X Maiden Lane, New York City 38.

77 DIFFERENT U.S.-25c Approvals. Utecht, 1143A, North Keeler, Chicago 51. **WHY pay More? Pick Stamps from our large collection.** 25 each. 10c if you chase. Be first. Premiums given. U.S. Also available. Roseland Stamps, Dept. B-25, Spring Lake, Michigan.

"TOPICAL Stamps." Big New Book. How to collect, mount, writeup. Lavishly illustrated. Only 25c. American Topical Association, 1902-S West Wells, Milwaukee 3, Wisconsin.

DEALERS Wholesale catalog. Postage 3c. Frank, 5031 Queensbury, Baltimore 15, Maryland.

ROOSEVELT "Death" issue. set Gamblers triangles, 25 others 3c. Approvals. North Star, Granada, Minnesota.

CATALOG Disregarded: Giant Approvals. Easy to fill sets. 25c. Stamp over 2c. Ask for Big Fellow. Fraser, 1093 'D' Street, Springfield, Oregon.

FREE-Stall Glad "Iron Curtain" Set. Approvals. Seminole, Dayton, Tenn.

FREE-cpl. set to new applicants requesting Central American Countries. Books by Country. No U.S. Stocked. Penny's Stamp, 188 Talmage Rd., Utah, California.

100 DIFFERENT stamps free with approvals at 60c discount. Martinson, Box 115, New York 33, N. Y.

JUGOSLAVIA collection including Tito's, Partisans, 10c. Approvals. Morris, Box 428, Grove City, Pennsylvania.

FIRST DAY Cover. Want lists welcomed. Included free: Valuable Airmail night cover. Myers, Box 219, Coopersburg, Pennsylvania.

ICELAND 10 different beautiful stamps for only 10c to applicants for our good old fashioned approvals. Old Colony Stamp Co., Dept. 5, New Haven, Conn.

QUEER Country collection from Baden, Camerons, Indo-China, Indonesia, Hong Kong, Madagascar, Malaya, Monaco, Newfoundland-P.E.I., S. Africa, Siam, etc. High values, low values. Bi-Colors, Topicals. A collection in itself. Only 10c with beautiful inexpensive approvals. Clark Semantics, Dept. B-47, Muskogee Heights, Michigan.

APPROVALS-Premium for quarter-Lat. Wilhelm Son, Inc., Kingwood, W. Va.

ROOSEVELT Greece. Pope Triangle, Greenland Israel, 51 others 3c. Approvals. Longshore, Box 3068-F, Lubbock, Tex.

100 DIFFERENT China 10c with approvals. Tru-Value, Box 2098, Santa Ana 4, California.

RUSSIA. 25 Exciting gems 5c. approvals. Belmont Stamp, Washington 15, D. C.

SCARCE Afghanistan. Comore, Greenland, Manchucuo, Singapore, 10c with unusual approvals. Bjar Nielsen, 4545A Harvard Avenue, Montreal 28, Canada.

FIVE cents brings you packet of foreign stamps absolutely no approvals. Jacob Rosenfeld, 247 Hart Street, Brooklyn N. Y.

"FOREIGN Package. Catalog \$7. Hivalues. Pictorials. Colonials. Airmails. 10c. Guaranteed. Klenz, Fairmount, Indiana.

50 DIFFERENT Bulgaria 10c! Approvals. Ensign Stamp Company, Dept. S, Bergen Avenue, Paterson 2, New Jersey.

PENNY Approvals by country. M. H. Hoerning, Merriam, Kansas.

CANADA, Queens, Wildlife. Commemoratives. Var. 10c with attractive approvals. Rheunard, 5591 11th Avenue, Montreal, Canada.

ECONOMICAL 1/2-1c Approvals. 22,000 varieties available. Dresel, Box 270-T, New York 10, New York.

50,000 STAMP grab-bags. 25c each. Anderson, Box 1, Reading, Pennsylvania.

14,000 DIFFERENT yours on our streamlined, systematic Club plan for only 50c weekly. Big shipments every two weeks. Details free. Sjoquist, Box 217, Valley Stream 70, New York.

OLD scarce U. S. seconds on approval. Slightly discounted, bargain prices. Hearnfeld, Clintonhill Station, Newark 8, N. J.

TWENTY British West Indies 25c with Approvals. Rahmer, Rome, New York.

BRITISH Colonial collection-Hivalues. 10c. Approvals. Free to approval buyers. Pleasure Stamps, 1855A-32nd Brooklyn 4, New York.

1000 DIFFERENT Worldwide stamps half price. Universal, P.O. Box 6, Kenosha, Wisconsin.

LUXEMBOURG 25 different 5c. Approvals. Neal, 5950 Tower, Riverside, California.

5000+ TREASURE Trove Stamp Grabags 25c each. Monjar, Cincinnati 14, Ohio.

DIME brings free stamps with approvals. Selby's, 1640 Maywood Street, St. Paul, Minnesota.

100 JAPAN 10c. with approvals. Gould's, Box 631, San Francisco 1, California.

TOPS! Free book. "How To Collect Stamps." Send for your copy today! Approvals. Littleton Stamp Co., Littleton 22, N. H.

FAMOUS Americans. fine mint complete sets. Authors 50c, Poets 85c, Educators 50c, Scientists 50c, Musicians 85c, Artists 50c. Inventors \$1.85. Extra special all \$5.00 available U.S. approval applicants. 50c. 10c. 5c. Occupation, references. Meitz, Brundage, Cambridge New York.

100 FOREIGN, 20 U.S. Commemoratives. 10c. Approvals. Wecklering, Box 442Y, La Minnetonka, Minn.

8 CANAL Zone 10c! Approvals. Merkel Stamps, 45 Cherry, Holyoke, Mass.

ICELAND Fish Stamps. with beautiful Pictorial approvals, discounted far below Stamps. 20133 Wexford, Detroit 34, Michigan.

50 PORTUGUESE Colonies 25c. Approvals. Roy Farr, 88 Maple, Hamilton, Canada.

30 DIFFERENT commemoratives. 1893 up. 10c U.S. Approvals. K & B Box 5, Brooklyn 14, N. Y.

25 EGYPT Free. Stamp appreciated, approx. \$1.00. Hesel Clark, Park, Md.

TRINIDAD 12 different 10c with approvals. Seminole Stamps, Box 1138-S, Coral Gables 34, Florida.

FREE-Your choice of \$2.00 to \$10.00 from our sensational Approvals. Every time you buy an equal amount. Bargain Stamp Service, Redlands, California.

ATTIC find U.S. Foreign covers 5c each. Anderson, 2314 Simpson, Evanston, Illinois.

GERMANY B257-269. warplanes, assaultships, infantrymen given "Approval Buyers." William Deems, Ravenswood, West Virginia.

125 DIFFERENT Worldwide 10c with approvals. Northwest Stamp Service, Box 27, University Station, Seattle 5, Wash.

GIANT Approvals Thousands Different! 1 and 2c. Wahl's Stamp Exchange, 7008K Farragut, Chicago 31, Ill.

WONDERFUL Offer. Seven complete mint sets only 10c with approvals. Reich (S26), 1033 Lawrence, Chicago 40.

FREE Sample-Interesting, Informative, Illustrated! National Stamp News, Anderson, South Carolina.

SELECT U.S. on approval. Mint, used. Kingsbury Stamps, Fairfax, Vermont.

CIPEX souvenir sheet plus 25 different U.S., 10c. Approvals. company. Village Stamps, 90-913 314 Street, Queens Village 28, New York.

FREE U.S. catalogue. Contains almost 1,000 illustrations; over 10,000 delightful bargain. Stone, 192-S Washington, Boston 8, Mass.

80 DIFFERENT U.S., included 40 Commemoratives, 25c. Seidenberg, Appleton, Wisconsin.

FREE United States Plate Block List. Simmyco, Box 63, Mattapan 26, Mass.

SOUVENIR Sheet Russia 1937 10c with approvals. Kingman Stamps, 30 Empire, Conkers, New York.

FREE U. S. illustrated bargain catalogue. Rothberg, Box 60, Boston 1, Mass.

PENNY Approvals jammed with Bargains. For better values, try Putnam Stamp Company, Mahopac, New York.

U.S. Revenue on approval. Eljay Stamps, Box 2865, New York 36, New York.

PHILIPPINES-30 Different 10c. Approvals. Moffat's, 740 Milton, Rock Hill 28, South Carolina.

U.S. Scientific Commemoratives free. Lists-all States, historicists, topicals! Lowest prices. Hammond, Crystal Beach 28, Florida.

WORLDWIDE packet free with approvals! Ery's, 802 North Central, Marshfield, Wisconsin.

CLOSEOUTS. Miscellaneous stamps, sets half price on approval. Variety Stamp, 57-C Circuit, Newton Highlands 61, Mass.

CANADA Stamp Collection on approval. Enclose 10c fee. Peterson, 405 Empire Bank, St. Louis 1, Mo.

FREE all different Canada, Germany, India, Approvals. William Hicks, 57 McLean, Wilkes-Barre, Pennsylvania.

10 DIFFERENT Triangles; 50 other stamps 10c with approvals. Nevyn Olds, San Andreas, California.

UNITED STATES. Fine Mint Airmails. #C7, #C8, #C9, #C10. Only \$1.00. Approvals. connections. Whiton Faine, Westport 12, Connecticut.

ASTONISHING GIFT. 40 US with superior approvals. Send 5c for postage. Sparta, Box 1052, Rochester, New York.

PENNY Approvals. write today. James Vance, Box 342S, Newark, Ohio.

THOUSANDS of Exciting Stamps. All Different. Yours for 1c, 2c each. Fill your order! Free! Buy 14 Approvals Sent for Free Examination. Code, 43-G Rinevalt, Buffalo 21, New York.

100 DIFFERENT Spain 25c. Penny approvals. Guaranteed. Reed, Box 980, Chicago 90, Illinois.

200 DIFFERENT Including Macau, Rhodesia, Mauritius. 10c to approval applicants. Ethen, Box 129, Valley Stream 42, New York.

SEA Horses-10c with approvals. Reed. Box 1662, Santa Ana, California.

SELDOM offered! 500 mixed U.S. nineteenth century Stamp. Includes 10c. 10c to approval applicants. AAA Stamp Company, Arcade Building, St. Louis 1, Mo.

SELL Stamps-Wholesale lists 25c. (re-usable) 530 Garden, Bellingham, Wash.

555 DIFFERENT 25c. Colonial Code of Good Hope Triangle Commemorative. Ruanda-Urundi Jungle Flower Set-3 Pals. plus Multi-Colored Portuguese West Africa Stamp. Includes 10c. 10c to approval applicants. 555 different stamps, all off paper. Catalog Value-\$15.00. Special Price to Buy 14 Approvals Sent for 25c. Jayne, Box 44-V, Brooklyn 23, N. Y.

U.S. Stamps! Coins! Discounts! Unilate, 730-D North Lexington, St. Paul 4, Minnesota.

POPULAR SCIENCE OPPORTUNITIES

29 ANTIQUES, RELICS & INDIAN GOODS

STAYSCHUN—Yendefiteefekayeschun—Illinois. Selling 600 historical firearms, 30-900, prehistoric stone and Indian. Select Collectors Cartridges, Confederate Money, Coins—Revolutionary, Civil, Indian—Wars, Muskets, Pistols, Swords, Bayonets, Bullet Molds, Powder Flasks—Blunderbusses, Pepperboxes, Kentucky Rifles, Wadsworths, Derringers, Duelling Pistols, Matchlocks, Arrowheads, Tomahawks, Handkerchiefs, Combs, Satchels, Saddle, Sugar-Bear-Buttles, Horns, Mounted Pheasants, Quails, Squirrels, Deerheads—Agates, Fossils, Mineral Specimens, Lapidary Supplies. Daguerrtype Plates, Gold Dollars, Bo-wood, Bio-horns, Violin Wood. Send 50c for profusely illustrated catalogue. Helke, Lookout, Wernona, Illinois.

4 PERFECT Arrowheads \$1.00. Smith, 841 Tacoma, Indianapolis, Indiana.

4 FINE Arrowheads and Saw Toothed Spearhead \$3.00. List free. Arrowhead, W 1249, Hot Springs, Arkansas.

4 FINE Arrowheads \$1.00. Spearhead \$1.00. List free. Lears, Glenwood, Ark.

4 AFRICAN Arrowheads \$3.00. Museum Supply. Sample \$1.00. Waters, 1383-99 East 26 Street, Brooklyn, New York.

BEAUTIFUL Black obsidian arrowhead \$1.00. Catalog 50c. Moise, 158 Doloresa, San Lorenzo, California.

30 MINERALS & PRECIOUS STONES

GEMCUTTING—Silvercraft. Illustrated Magazine tells you cut gems, make jewelry, 150 ad illustrations, equipment, gems for collectors, cutters. Free literature. Lapidary Journal, Del Mar 1, Calif.

GEMSTONES. Mineral specimens for owners and collectors. Every variety. Lowest prices. Free catalog. Plummer's, 4720 Point Loma Avenue, San Diego 7, California.

SAPPHIRE. Topaz, tourmaline, garnet, peridot. Five unique gem specimens. 120 Ten polished gems, baroque shaped, \$1.00. Free big bargain list jewelry, gems, profitably easy, do your own jewelry. Exhibit 6, 1116B Wilcox, Hollywood 38, California.

HIGGINS' Gems & Minerals. Finest quality. Free price list. 2117 Park, Salem, Oregon.

LARGEST gem and mineral magazine tells how to have profitable fun with rocks, gems, jewelry. Monthly, \$3.00 year. Sample 25c. Gems & Minerals, Dept. 52, Fairdale, Calif.

TEN N. Mex. Minerals \$1.50. Six Fluorescents \$1.00. Five Crystallized Minerals \$1.00. Fool's Gold 25c. Lists Free. Hartson, Winston 5, New Mexico.

ROCKHOODS! Trips every issue. Subscribe! Dollar: "Prospector's Gazette", Bellflower 51, California.

31 HOBBIES, COLLECTIONS

INVENTING can be an interesting and profitable hobby. Write for complete particulars. Institute of Invention, Department 30-E, 631-E St., N.W., Washington 26, D. C.

65 ASSORTED Army Patches, Insignias, Ribbons, \$1.00. Surprise include LACGO, 19 East 16th Street, New York City 3.

GENUINE Nazi medal \$1.00; 37 different American emblems \$1.00; Catalog 10c. Insignia Club, 560-A Fifth Avenue, N. Y.

UNUSUAL Hobby: Authentic Army Patches, Insignias, Ribbons, enameled Cents, Navy rates, 50 assorted for \$1.00. Rev. Military, Dept. C, 1261 Broadway, N.Y.C.

UNUSED matchbook covers—100 different \$1.00—36 page catalog 25c—matchbook album \$3.00. Edelman, 1311P East 84 Cleveland 3, Ohio.

FREE three months subscription Leathercraft Free, write Tandy Leather Co., Box 791-E21, Fort Worth, Texas.

MINIATURE gold pan with small California gold nuggets. Price \$3.00. "The Gold Miner," 26315 Gading Road, Hayward, California.

MILITARY Miniatures: U.S. Marines, American Revolution, Civil War, Cavalry, Illustrated Catalog 25c. Bussler Miniatures, Dept. E, 40 Howe Street, Quincy 99, Mass.

GROW giant crystal! Free booklet. Crystalcraft, Box 35, College Station, Texas.

NAZI Insignia, 12 Different, \$1.00. Arm-bands, daggers, flags, medals. Illustrated lists. Medetrats, 1923 34th St., S.W., Cal-gary, Alberta, Canada.

KLONDIKE novelty jewelry findings as-sorted, beads, pearls, jewels, 5 lb. lots \$1.50; Sample \$2.00 lb. Merchandise, 19-B East 16th Street, New York City 3.

32 PHOTO FINISHING, PHOTOCOPIES, ETC.

PHOTOGRAPHY For Pleasure or profit. Learn at home. Practical basic training. Long established school. Free booklet. American School of Photography, 835 Diversey Parkway, Dept. 1721, Chicago 14.

SURPRISE gift with first roll developed. 8 Jumbo superpak album prints or 16 contact prints 40c. 12 exposure roll 50c. Certificate for 3-5x7 enlargements. Dept. B-14, Owl Photo Co., Weatherford, Okla.

FREE 5x7" introductory enlargement with first roll. Finest quality. Dated prints in handy Super paks. 8 exposures 35c; 12, 50c. Globe Photo, Dept. PS, Box 399, St. Paul, Minnesota.

8-12 EXPOSURE rolls 39c. Jumbo prints. Free 5x7 enlargement with each roll developed. Guaranteed work, one day service. Lincoln Studios, Dept. L, Box 13, Lincoln, Nebraska.

FINEST copies from your photographs, tints, polars, documents, etc. No negative needed. Three dollars. Includes two prints to \$3.10. Jack Koons, Hunting-ton Mills, Penna.

8-HOUR service on deluxe Jumbo prints. 8-Exposure roll developed and 8 Jumbo 16x20 4x5 2 exposure 50c. Guaranteed 70c; 35 mm. 20 exposure 75c, 36 exposure \$1.25. Jumbo Decklede Reprints 4c each. Color prints, 10c. Mail Order Photo Service, Photo Service, P. O. Box 210, Oakland, California.

QUALITY Kodak finishing, 8 exposure roll 35c; 12 exposures 50c; 16 exposures 60c. Reprints 10c. Fast service. Guaranteed quality, 40 years continuous operation. Be a satisfied customer. We do color. Send for mailers. Mail Order Photo Service, Box 297, Watertown, Wisconsin.

ENLARGEMENTS—from your negatives. Eight 5x7 or Five 8x10—\$1.00. Helen Banner Photos, Morrisville, Pennsylvania.

ROLL Developed and 5x7 glossy prints. 8 exposure 80c; 12 exposure \$1.20. Hagner, Dept. B, 1318 West Columbia, Philadelphia 22, Pennsylvania.

FREE Offer. 8 Jumbos 40c. 12—55c. Mention this adv. and get extra set free. Western PS26, Box 298, San Francisco 1.

FREE Roll Developing. Pay for prints only. Jumbos 4c. Regulars 3c. Pictures Re-fund. Rush Service. Guaranteed Square Deal Photos, Hutchinson, Kansas.

4 X 6 OR 3 1/4 X 4 1/2, overize glossy prints. 8 exposures 40c. 12 exposures 60c. 16 exposures 80c. Hagner, 1318 West Columbia Avenue, Philadelphia 22, Penna.

33 MOTION PICTURES, SLIDES SOUND EQUIPMENT

MOVIE Camera Film 8 mm roll \$1.50. 16mm roll \$3.00. Free processing. Better Films, 742 New Lots, Brooklyn, N. Y.

7-12 Recorders, Tapes, Accessories. Unusual Values Dresser, Box 9, Peter Stuyvesant Station, New York 9.

SAVE 50% Guaranteed—fresh color, b&w movie film! 8mm, 16mm. Free catalog! 1600-H 47th Holly, Kansas City 12, Mo.

FREE! Blackhawk's big sale catalog new and used 16mm, 8mm, films; 4x2" color slides; used 16mm. sound projectors. Biggest stock in USA. Blawie Films, 1201 Eastin, Davenport, Iowa.

WORLD'S largest selection of films, Free bulletins. Specify 8mm.—16mm., si-lent-H 47th Holly, Kansas City 12, Mo. 415 Lexington Ave., New York City 17.

FREE Catalogues, 5,000 8-16MM. Films. International Films, Greenvale, New York.

THRILL to slides processed from your film. Free bulletins or negatives. For trial write Thirty-five Slides, Box 279-S, Green Mountain Falls, Colorado.

16MM Sound projectors and Films. Bed-ner, 5900 So. Fairman, Chicago.

FREE Listings: color, b&w sports, comedies, travel, musicals, etc. Catalog, 15c. Turkey Films, 423 S. Lincoln, Hinsdale 1, Illinois.

BEAUTIFUL Yellowstone—Ten. Color Slides \$1.00. Eddings, Corning 83, N. Y.

TAPE Records, tapes; wholesale prices. Korstan, 215 E. 88, New York City 28.

34 CAMERAS, PHOTO SUPPLIES

BASS Says: Quality Cameras. Since 1910 When Chicago visited the Camera Cross Roads of the World... or write us for your favorite equipment, new or used. Send for big discount. Free "Wholesale Plan." American Buyer's, Hertel Station, Buffalo 16-P1, N. Y.

BUY wholesale nationally advertised cameras, photo supplies, thousands other products at big discount. Free "Wholesale Plan." American Buyer's, Hertel Station, Buffalo 16-P1, N. Y.

PHOTOGRAPHY For Pleasure or profit. Learn at home. Practical basic training. Long established school. Free booklet. American School of Photography, 835 Diversey Parkway, Dept. 1741, Chicago 14.

20 TO 50% Discount everything photographic, giftware. Free catalogue. Dart, 3812F Atlantic Avenue, Brooklyn 24, N. Y.

NEW Auer C-3 Outfit \$48.90. Terrific Discount. Send for free catalog. Free Catalog, Mailers Mart, Box 135-P5, New Rochelle, New York.

YOUR 35mm Camera can bring you hundreds of dollars profit. Write America every family and business is a prospect for amazing new low cost method of color enlargement. Send for free sample and pricing facts. Write Polylix Co., Dept. PS-2A, 723 S. Wells, Chicago 17, Illinois.

35 MUSICAL INSTRUMENTS, SONG WRITERS & RECORDS

ACCORDIONS—Direct from importer—save 50% and more! Free trial. Lifetime guarantee. Trades accepted. Free Catalog. Write Accordion Utility, Dept. 26-P, 2003 Chicago, Chicago 22, Illinois.

WANTED! Poems for musical settings. Write Songwriters' Service, Clifton, N. J.

POEMS Wanted for New Songs. Send poems. Immediate action. Write Western Music Company, 1472-P Broadway, New York City 36.

POEMS needed for new songs. Send poems. Immediate action. Write Western Music Company, 1472-P Broadway, New York City 36.

FREE Records of your song—your words. My Songwriters' Service, 1094 West 39th Street, Dept. K, Los Angeles 37.

SONGS—Poems wanted. Good opportunity. Write Songwriters' Service, 1094 West 39th Street, Dept. K, Los Angeles 37.

SONGPOEMS and lyrics wanted. Mail to: TinPan Alley, Inc., 1650 Broadway, New York 19, N.Y.

POEMS wanted for musical setting. Send poems. Immediate Consideration. Five Star Music Masters, 646 Beacon Ridge, Boston, Mass.

SONGWRITERS: Recording company wants new songs. Royalty basis. National sales, promotion if selected. No charge for songwriting. Send poems. Write Music Dept. G-18, Box 2507, Hollywood, California.

NAME brand musical instruments and supplies. Immediate action. Write Music Masters Service, Box 711, Wilkes-Barre, Penna.

PROFESSIONAL Songwriting Tips can give you orders—G.M. Fitchett Publications, Box 2908-B, Hollywood 28, California.

WHOLESALE Catalog! 30-80% Discounts! Appliances, Musical Instruments, Typewriters, Phonographs, Watches, Jewelry. Write: Houseware, etc. Consolidated Distributors, 21-81 Lafayette, Paterson 15, New Jersey.

MUSICAL Instruments: new. Used. Bought or required. State your wants. Milton Arfin, 1712 Nostrand, Brooklyn 26, N. Y.

SONGWRITERS—Outstanding, ethical offer. Hubbell C-15, 6808 Oleander, Chicago 31, Illinois.

SONGWRITERS! Send poems, songs. Music Service, 243 West 72nd St., PS, New York 19, N.Y.

PROFESSIONAL DJ and publisher promotion records, now available for writers. Publicity. Co-op publishing. Metropolitan, 10932 S. Santa Fe, Los Angeles 45.

PLAY piano the first day! Copyrighted secret. Details free. Miracle Method, Box 5203-S, Phoenix, Arizona.

POPULAR SCIENCE OPPORTUNITIES

POPULAR Songs. How to write and sell them. Write for free booklet Successful Songwriting. Gateway Songs, Box 2470, Hollywood 28, California.

FREE ACCORDIONS. Wholesale. Free catalog. American Accord Center, PS-2, 5329 Belmont, Chicago.

ELECTRIC Guitars, amplifiers, parts, wholesale. Free catalog. Carvin, PS 287, Corona, California.

36 RADIO, TELEVISION, SUPPLIES & EQUIPMENT

MAKE Simple, Tubeless, Battery-Driven, Gett-in, radio. Genuine Melomite crystal Detector, illustrated instructions. 50c postpaid. Allen, 427-PS5, Clinton, Mo.

FREE Television and Radio Troubleshooting Manuals and Descriptive Literature upon request. Build 16 Radio Circuits, using Printed Circuitry as well as professional punched Metal Chassis. "Free Kit," includes all Radio Parts, Tubes, Instructions, Tester, Soldering Iron, Quizzes, Free Consultation Service—only \$19.95 complete. Progressive "Edu-Kits" Inc., Room 384, 497 Union Ave., Brooklyn 11, New York.

RECORDERS, Tapes, Radios, Phonographs! Wholesale! Catalog. Towers, Box 155, Philadelphia 5.

FREE 32 Page 1956 Television—Radio Hi-Fi—Electronic Catalog! World's largest stocks, lowest prices. Everything for experimenters, builders, amateurs, servicemen. Latest equipment. Free copy! Allied Radio Corp., 100 N. Western Ave., Dept. 31-B-6, Chicago 80, Illinois.

SAVE ON TV repairs. Details free. Box 680-42, Syracuse, Ind.

GEIGER Counting and Metal Detector Kits. Inexpensive. Educational. Free Literature. Electronic Applications, 5024 Lee Highway, Arlington 7, Virginia.

EDUCATIONIST "Edu-Kit" Radio Complete With Phone \$7.50. Edisto Electronics, 827 Edisto Drive, Orangeburg, S.C.

PERSONAL radio kit—tube—parts. 32 Crystal radio with 1000 transistors. Cozzo, 2059 60th Street, Brooklyn 4, N. Y.

MAKE Long distance crystal radio that works anywhere. Fully illustrated booklet with money back guarantee. Francis, Box 5863, Cleveland, Ohio.

18 PRINTED Circuits in 8 1/2 x 4 1/4 plastic box. Replaces 42 resistors, 52 capacitors. Only \$14.95. Long, Box 573, Station A, Champaign, Illinois.

PORTABLE Transistor Radio. No Aerial. No Ground. Send \$1.00 for Diode and Instructions. Bill Cooter, Washington 18, D.C.

EXPERIMENTERS. Build a Voice Powered Radio Transmitter. No voice needed. Circuit Drawings, Technical Data, Parts List. Fully Explained in simple terms. \$1.00 postpaid. G. W. Bryan, Box 346, Belmar, New Jersey.

37 BUSINESS OPPORTUNITIES

START A Buying Service, buy wholesale thousands nationally advertised products. Make big profits selling at 50% discounts. Postcard brings details. American Buyers' Hertel Station, Buffalo 16, N. Y.

ENVELOPES addressed accurately, reasonably. Fast service. We have capable addressers in your city. Glenway System, 5713 Euclid, Cleveland 2, Ohio.

"MAKE Perfumes" other products—Sell mailorder. International, 6347 Par-nell-PS-2, Chicago 21, Illinois.

IMPORT-Export! Importers, profitably, world-wide business from home, without capital, or travel abroad. Established World Trader ships 100 nations free. No experience necessary. Free details. Melinger, F691, Los Angeles 24.

WE Love our mailman. He leaves over \$100 monthly in our rural mailbox. My college professor husband drafted a scientific home mailorder method. We bought a house on a ranch, live as we wish. Now we sell the "Ranch Mailorder Method." Operates anywhere. Inquire: Evelyn Reich, Raleigh, Texas.

GROW Orchids at home—Tastefully-fascinating Year 'round, Maine to California. No Greenhouse. Gorgeous Cattleyas, Cymbidiums, etc. Success home grown. Shows you how. Free full details. Flowerland, 4622 Wilshire, Los Angeles 5.

\$1,000 MONTHLY possible in collection agency business. Free details. W. Cole Associates, Syracuse 2, New York.

OPERATE profitable mail order business. Write Walter Service, 4159-B East 112th, Cleveland 5, Ohio.

BRONZE Baby Shoes, Instructions, Equipment and mountings for genuine electroplated process. Free catalog. Holly-wood, Dept. 5, Dept. 1, 1624 East First Street, Los Angeles 33, California.

MEN—Income from local information. No selling. Neherco, LaVerne 6, California.

NEWEST Spare, Full-Time Home Business, \$5 to \$10 hour possible. Paint with sued to finish with touch and eye appeal. Beautifully auto dashboards, signs, radios, toys, figurines, lamps—1001 others. Complete, Step-By-Step Instructions sent for no-risk examination. Free details. Coast, Los Angeles 61.

BE appointed state notary public now. Write—Stationers, Elciotes, Texas.

YOUR Own name brand business. No investment, no inventory. Part time or full time. Sell famous brands of appliances, housewares, silverware, radios, vacuum cleaners, lamps, toasters, watches, jewelry, etc., over 1,000 items. Join thousands of successful independent distributors for free catalog. Dealer price list. H. B. Davis Corp., Dept. F, 145 W. 51 St., New York City.

FIX Typewriters Inexpensive home owned method. Revealing information. Write. Typewriter, Tarentum 2, Pennsylvania.

\$1,000 MONTHLY home mailorder, free advertising method. Revealing information. Seidel, 6000-BN Sunset, Los Angeles 28.

WANT To Make Big Money At Home? \$5 profit in an hour possible with invisible water. Make invisible stains disappear from clothing, fabrics. Steady year-round demand from cleaners, laundries, homes. Free catalog. Fabricron, 8338-S Prairie, Chicago 19, Illinois.

GOOD paying business silvering mirrors, plating articles in the shop and home. Free booklet. No inventory. Free details. Free metal. Gunmetal Co., Atene E, Decatur, Illinois.

BREED Rare Tropical Fish at home. Earn Big Money! Learn to breed! Help fill huge demand. Amazing Opportunities. Free Plan. Tropical Fish Breeders, Los Angeles 61, Calif.

METALIZE Baby Shoes, jewelry, gifts. Free Catalog. Kikivay, Box 73136, Los Angeles 3.

HOW and where to obtain Capital? Free details. Star Service, Wapakoneta, Ohio.

AMBITIOUS? We establish you in your own business, supply catalogues, circulars, etc., ship orders under your name, paid or C.O.D., show you exactly what to do. Household items needed in every home. Sell direct, by mail or through agents. Catalogue, plans, details absolutely free. Write Taylor Corp., Lindenhurst 21, New York.

BUY wholesale — \$75,000 Merchandise catalog. 25c. Worldwide, Box 12-D2, N.Y.C. 60.

MINK Raising information free. Complete plans. Superior Mink Farm, Superior E 55, Wisconsin.

MAKE Money Growing miniature trees on your Window Sill. Free seed and Plan. National Nursery, Dept. 58, Ingwood 4, California.

WHOLESALE Catalog! 30-80% Discounts! Appliances, Musical Instruments, Typewriters, Phonographs, Watches, Jewelry, Records, Housewares, etc. Consolidated Distributors, 21-15 Lafayette, Paterson 15, New Jersey.

HAVE Home Mail Business—Get \$10 Dollars in Every Mail—Keep \$8.00. Everything furnished. Hutchinson, Box 87-C, Dunwoody, Mass.

LEARN Sewing Machine "Big Money" Repair Machines, Supplies wholesale. Write Taylor Service, Box 2126, San Bernardino 1, California.

GROW Expensive Herbs For Use! Big Profits Home-Business of your own. Year around profitability! We supply everything you need for Free Start-Up. Free Plan and Revealing Plan. National Herb Exchange, Dept. B, Gardena, California.

MAIL Order—adding agency executive reveals sensational no-risk advertising and merchandise methods. Start in office or home minimum capital positive profit. Free details. Inquest 108 Payne, Dept. 2-2, Cleveland 14, Ohio.

MONEY in saw and lawnmower sharpening sparetime at home. Repeat cash business. Experience unnecessary. No selling. Free booklet explains. Charles Foley Company, Columbia Heights, Minneapolis.

MAKE Money at home as renewal headquarters for all magazines. Big profits now. Liberal commissions. Supplies furnished. Express Mail Order. Write for Free Catalog. McGreor Magazine Agency, Dept. 510-B, Mount Morris, Illinois.

SHINE Cars Without "Polish." New Invention! Free Catalog. Write for Free Mirror. Samples sent on trial. Kristie 117, Akron, Ohio.

BIG Profits in U.S. Stamps. Easy money-making sales plan. No stock required. Free circulars. Raymax, 37-RX Malden Lane, New York City 38.

WHOLESALE—Get the big merchandise—furniture, appliances, TV's, clothing, toys, auto accessories—most anything. Save half. Literature Free. Associated Wholesale Service, 1016-C Starr, Burlington, Iowa.

FREE! "301 Profitable Small Businesses!" Amazing shoestring plans! Work Home! Start-up costs! Free! Home Surveys, Kenmore, 23-S, New York.

FASCINATING Year-round Home Business. Assemble parts we furnish and make money—profits. Hanco, Box 97C, Lombard, Illinois.

MINIATURE Trees. Why pay \$2.00—\$10.00 for growing secrets? Free details. Tiny Trees, Box 394-S, Chicago 90.

TRADE Magazines keep you posted. Late copies through our get-acquainted service. 5,166 publications—all fields. Current List free. Commercial Carrying Publishing Company, 345 North Ritter, Indianapolis 19, Indiana.

\$60.00 WEEKLY at home—simplified easy bookkeeping. Details Free! Charles Karpal, 216 W. Jackson Blvd., Chicago 6, Illinois.

OPPORTUNITY to earn \$15,000-\$30,000 annually. Franchise protected. Grants on \$12,500 guarantee. Live at home. No merchandise to buy. Selfemployed. One of most exclusive money-making opportunities in United States and Canada. Send for free explanatory booklet. Harrell and Company, Box 10, New York.

ONLY new Money-making Plan! We sell your products. You build luggage and cases at home—we supply instructions—materials—tools—free. Bohlen, Chicago, Cascraft, 807-DB Sunset, Los Angeles 12.

WHOLESALE catalogue! Appliances, cameras, watches! Cam Company, 6806PS-20th Ave., Brooklyn 10, New York.

LIQUID Rubber makes flexible molds. Free Sample. Chaney, 1130 E. 16th St., Jacksonville 6, Fla.

REBUILD batteries. Make rubber stamps: Repair dolls. Catalog "60 Ideas" free. Universal, Box 1076-B, Peoria, Illinois.

YOU for President of your own collection Office. Free details. Franklin Credit, Roanoke 7, Virginia.

THRILLING Profitable Home Business. Make fast-seller chenille monkey trees, dolls, flowers. Terrific holiday demand. Inform on free "Gifts for Brides" N.Y.C.

TO \$100.00 weekly. Sparetime home operated mailorder business. Successful "Beginner's" plan. Everything supplied. Lynn, 10420-C National, Los Angeles 24, California.

UP To \$600.00 Monthly. Home Mail Order! Details Free! Stommel, Box 104, Detroit 31, Michigan.

BIG Profits Raising Fishworms and Crickets. Free details. Carter Worm Company, Plains, Georgia.

PRINT for Profit at home. Amazing new method prints colorful posters, banners, greeting cards, etc. No inventory. Hundreds at time. No press needed. No art. Fantastic profits! Need representative you're free to make. Free details. Home business plan. Screen-Print, Dept. PS-2, Los Angeles 61, California.

SAVE 20% to 30%. Buy wholesale! Nationally advertised merchandise. Free details! Beecher Sales, Box 2161-E, Cincinnati 1, Ohio.

BECOME A game warden, professional hunter! Join forestry park, fishery services. Good pay! Opportunities open! Free! revealing "Select-Job Chart," details, job-getting secrets. Home Study Home-owners, 1038-NF LaBrea, Los Angeles 19, California.

POPULAR SCIENCE OPPORTUNITIES

MEN and women wanted to start home business in spare time with little table-top rubber stamp machine. Easy to earn up to \$8.80 an hour without previous experience. Full particulars Free by mail. Send postcard to Robert S. 1512 Jarvis, Room 82, Chicago 26, Ill.

WHY waste in slop, slush and snow. Enjoy Florida sunshine, fishing, bathing. 25 money making ideas. Catalog for you to be boss. Send \$1.00. Sun Associates, Wildwood, Florida.

START Money-Making Plastic Laminating Business at home in spare time. Material that costs 11¢ produces back \$3.50. No canvassing or selling but mail orders bring in \$30.00 a day. Write for full particulars Free. Rush name on postcard to Warner, Room 82, 1512 Jarvis, Chicago 26, Ill.

MONEY in saw and lawnmower sharpening sparetime at home. Repeat cash business. Experience unnecessary. No selling. Free booklet explains. C. Foley Company, Columbia Heights, Minnesota.

OPERATE profitable magazine subscription service. New telephone plan. Handle renewals for all magazines. No experience or investment needed. Rush name; send money. McGraw-Hill Agency, Dept. 510-C, Mt. Morris, Illinois.

FREE! "301 Profitable Small Businesses! Amazing shoestring plans! Work Home! Start Spentime! Exciting Surveys! Kenmore, 23-S, New York.

"MONEYGETTER'S Bulletin" sample 25c. Donovan, 793 Greenbelt, Levittown, New York.

DOLLARS In Modern Baby Record Books. Baby Shoe Kits. Liebig Industries, Beaver Dam 57, Wisconsin.

YOU cast metal, free literature. Castings, Box 134, Lewywood, California.

SPARETIME Profits Taking Subscriptions. All Magazines. Wholesale Catalog Free. Cassell Publishers, Westfield, N. J.

PRINTING. Office Supplies wholesale. Save 50¢-6¢. Royal, Box 368-S, Cleveland 27, Ohio.

\$5.00 HOURLY spare time possible, home mail order. Details free. Demsey, Box 42237-S, Los Angeles.

SELL Yourself—sell neighbors. Aluminum awnings—Beautiful Baked Enamel Colors—All sizes—factory prices! Write "COFF," Box 1024, Canton, Ohio.

BUY Wholesale! Illustrated catalog \$1.00 Deposit. Distributor, 26 Spencer Street, Providence, Rhode Island.

VENDING machines earn big money! Request 32 page free. J. W. Sawyer Machine Corporation, Dept. 19, 715 Enzor Street, Baltimore 2, Maryland.

\$15.00 WEEKLY doing plastic sealing work. Jansen Products, Dept. 2, Penna.

LIKE to receive lots of cash in your mailbox? Sell by mail the right way! Write, Mailtrade, 130 Linden Street, So. Williamsport, Pennsylvania.

TREMENDOUS profits up to 2400% from investigated list of 30 lowest priced name brand wholesale catalogs in the world. Cash \$2.00. B. R. Rustin & Co., 576 Sheridan, Niles 83, Ohio.

\$5.199.90 WAS Paid to John Betts in few weeks. Grow Mushrooms. Cellar, shed. Spare, full time. Order free! McGee, Box 150 lb. Free Book. Mushrooms, Dept. 179, 2954 Adbrook Way, Seattle, Washington.

RECEIVE hundreds homework, mail-order opportunities. Cashback answering ads! Year's service, 25c. Peterson's, 4030-M East 14th, Des Moines 13, Iowa.

BUY your own boss. Choose from 301 "little" businesses. Crawford's, Anthony 2, Kansas.

BUY Wholesale! Television, Freezers, Refrigerators, Sewing Machines, Power-Tools, etc. Illustrations. Free Catalog. Box 1485, D-FPSM, Milwaukee, Wisconsin.

PROFITABLE Hobby adds to income and pleasure. Operate home mail order business. Write for policy, Box 727-B, Kalamazoo, Michigan.

WANTED: Typewriter owners. Make handsome profits. Write today. Groves Company, 692 East 10th, Des Moines 13, Iowa.

\$35.00 WEEKLY addressing envelopes. Instructions \$1.00 Refundable. Advservice, Spring Valley, New York.

\$50.00 WEEKLY spare time possible. Home mail order. Details free! McKenzie, 8463-S LeRoy, San Gabriel, California.

BECOME Finance specialist. Big profits. Complete instructions. Free details. Tucker Associates, 3633 Warner N.W., Washington 10, D. C.

\$1,000. MONTHLY possible raising earthworms! Backyard, garage, basement. Complete illustrated booklet explains raising, feeding, packing, marketing. 25c postpaid. Ozark Worm Farm-V, Willow Springs, Mo.

FREE Book "505 Odd Successful Businesses." Work Home. Expect something Odd! Pacific-35, Oceanside, Calif.

FREE wholesale catalog, 30%—80% discounts. Jewelry, appliances, housewares, etc. Shelton's, 8405 Cedarbrake, Houston 24, Texas.

"HOW To Make Money In Mail Order Business." By Bartlett Award Winner. Postcard request brings details. Scroggs, Box PS-442, Stillwater, Oia.

EARN UP To \$200.00 Monthly Spare time! Details Free Clyde, Box 635, Beaumont, California.

FREE Folio "55,000-45,000: Unlimited Vacations." No merchandise, equipment. Unknown! Work home—parttime! Haytins—516, Carlsbad, Calif.

RECEIVE Opportunity Mail Worth Hundreds of dollars. Send 25c or \$1.00 for big mail. Bill Riddle Post Office Box 18, Waynesboro, Virginia.

CATALOG! Profitable Opportunities. Rush 35¢! Risdin, 3468 Cass, Detroit 1, Michigan.

BARGAIN Offers! Interesting mail, earning plans, addressing work. Value coupon. Nelson Sales, Eikhorn 11, Nebra.

SELL Hamburgers, pie. No Capital needed. Or operate small cafe, diner. Free detail. Restaurant School, M042, Fremont, Ohio.

TEACH Parakeets to talk. Write C. Lewis, Box 1841, Presque Isle, Erie, Penna.

BUY wholesale! Thousands Products—Everything. Free catalogs! Econ-O-Mart, 9 Perry White Rd., New Jersey.

\$5.00 BRINGS \$124.00. Repeater! Sample 25c. Jakiet, 268-S Western, Chicago 47.

SNAPSHOTS Wanted. All types. Cash prizes. Rules 25c. Bell, Montrose, B.C., Canada.

\$150 WEEK—easy! Start home Venetian Blind Laundry. Revealing book free. A. V. Co., 101 S. 44th, Philadelphia 4, Penna.

HOMEWORKERS Wanted. Painting. No Good. Earnings. N. Roland, R.R.1, Vincennes, N. J.

CLOSEOUT 50,000 GE Subzero Automobile Engine Heaters. Listed \$8.95, sample \$3.95. Terrific quantity discounts. Illustrations, literature, and color plans, (\$1.00) (Refundable first order). Wisniewski, P.S., Milwaukee 7, Wisconsin.

\$13.50 PER Thousand. Home addressing. No selling. Details for stamp. Service, Box 373, Los Angeles 37.

MAKE Money in Mail Order. Send for Free Profit Facts, Whitecomb, Box 74635, Los Angeles 4, California.

BE first—Get the latest—Best low cost starting mail order offers everything furnished. Order filed. Rush name. Modern Industries, 405 E. Chestnut Street, Waukegan, Ill.

PIANO Tuning Pias. Learn this profitable profession at home easily with patented Tunometer and mechanical aids. No knowledge, music necessary. Diploma awarded. Write or bookie. Niles Bryant School, 3731 Stockton Blvd., Dept. S, Sacramento 20, Calif.

MAKE \$100.00 Weekly addressing, mailing. Free Products, 2342F Washington, Chicago 12, Illinois.

BE Successful! Napoleon Hill's "Think And Grow Rich" tells how. \$2.95 Postpaid Worldwide! W. M. 3621 West Park Rd., Cleveland 11, Ohio.

BIG Profits stamping social security plates. Catalog free—General Products, 188-S1 State, Albany, New York.

39 FORMULAS, PLANS, ETC.

MILLER'S Modern manufacturing formulas make fastest-selling products that get the business and pay! Fifty years supplying the best. Valueable literature free! Miller, Chemist, 1517-C, Tampa, Florida.

FORMULAS—All kinds. Latest products. Literature free. Kemico, Park Ridge 15, Ill.

AMAZING Book Contains in all 10,000 valuable trade secrets, formulas, recipes. Postcard \$2.88. Fleischer's Laboratories, Everett 49, Mass.

LARGE formula catalog free. Anything analyzed \$35.00. Western Chemical, Salem, Oregon.

10,000 AUTHENTIC formulas. Information, lists free. Brockway, 1145 High, Topeka, Kansas.

40 PLASTICS

PLASTICS home-craft course for Men and Women. Tells and shows how to make hundreds of fast selling plastics products. All plastics and materials for 21 projects included in course. No special tools needed. Course pays for itself. Write for free booklet, Interstate Training Service, Dept. D-2, Fort Lauderdale, Oregon.

NEW Liquid Casting Plastic, clear, colors. Embed real flowers, insects, photos, coins. Saw, drill, carve. Send 25c for handbook "How To Cast with Liquid Plastic" and proved success plan showing how to make money at home. Castolite, Dept. B-102, Woodstock, Illinois.

PLEXIGLAS—Cut to size—Clear—Any thickness—Colors—Rods—Tubing—McClarin Plastics, P. O. Box 168B, Hanover, Pa.

LAMINATING Supplies. Price List Free. Solutions, 46 Portland, Boston 23, Mass.

PLEXIGLAS, Lucite, Square foot cost 1/16"—\$1.10, 1/8"—\$1.30, 3/16"—\$1.65, 1/4"—\$1.95, 5/16"—\$2.25, 3/4"—\$4.38. Colors add. Plastics, 23-25, Sussex Avenue, Newark, New Jersey.

PLEXIGLAS, Fibreglas, Polyester, Acetate. Unique wholesale-retail catalog—15c. Gem, Box 8, Box 885, North Hollywood, California.

41 CHEMISTRY & PHYSICS

LABORATORY apparatus, chemicals, microscopes, complete chemistry sets, minerals, uranium ore. 10c brings catalog. Porter Chemical Co., Hagerstown 4, Md.

HOME laboratory and apparatus kits, Laboratory supplies. Catalogs free. Published 1931. John H. Winn, 124B West 23rd Street, New York, N. Y.

FREE! Uranium detector and Chemical puzzle (worth \$2.50) with First five lessons and diploma course on Practical Chemistry! Big package of chemicals, altering equipment, charts, etc. Only \$1.00. National Chemical Supply, P.O. Box 606-H, Redwood City, Calif.

BOOKLETS: 60 pages each! "Beginners Chemistry," "Chemistry," "Einstein's Relativity," "Physics," "Atomic Theory," "Electron Theory," "Scientific Oddities," "Light," "Sound," "Heat," "Electricity," "Radio," "Astronomy," "Useful Tables," "Cosmology," "Mathematical Oddities," "Scientific Terms." (Order by Titles) 10c each. Franks, 3121 South Racine, Chicago 8.

EXPERIMENTERS: Terrific Barksins catalog—30c. Hagenow Laboratories, 2414 Clark, Manitowoc, Wisconsin.

ILLUSTRATED Catalog: Chemistry, mineralogy, biology 20c. Tracey Laboratories, Evanston, Illinois.

SP—Get quick chemical analysis. \$3.00. Cutting Sons, Los Altos, California.

CHEMICALS. New, used, supplies. Catalog free. Enlistment procedure, bus. pers. \$2.00. Legion Information, Box 483, Joplin, Missouri.

42 HELP WANTED

LOS Angeles complete classified section, Sunday edition, \$1.00. Edstrom, P.O. Box 401, South Gate, California.

START mail order business in your own home. We supply catalogs, circulars etc. ship orders under your name (no stock to carry) and show you exactly what to do. Postcard brings complete details. Instructions absolutely free. Topval Corp., Lindenhurst 626, New York.

FRENCH Foreign Legion. Action hungry men need. Enlistment procedure, bus. pers. \$2.00. Legion Information, Box 483, Joplin, Missouri.

POPULAR SCIENCE OPPORTUNITIES

JOBS to \$1500 Monthly. All Trades. So. America. The Islands. U.S. Fare Paid. Application Form. Free Information. Write: Nept. 76D, National, 1020 Broad, Newark, New Jersey.

ALASKA Jobs—Up to \$1500 monthly. 1958 Business Directory & Government Maps—\$2.00. Includes Military & Civilian Construction, Mining, Aircraft, Lumber, Fur-Farming, Homestead and Highway Maps. Get list free. Write: "Alaska," your spring job now! Bayer, Box 424-PS, Hollywood 28, Calif.

FOREIGN Jobs—Latin America, Alaska, Canada, up to \$1500 monthly. Up-to-date Foreign Service Directory gives complete information; hot list of firms hiring for Military and Civilian Construction, Aircraft, Oil, Exporters, Importers, Mining, \$1.00. How-When-Where to apply, 9th Successful year! Global Reports, Box 883-P, Hollywood 28, Calif.

OPPORTUNITIES in San Joaquin Valley. Richest in nation. Bakersfield—Fresno—Sacramento, California. Help Wanted Columns. Airmail, \$1.00. Bartell, Box 663, Fresno, California.

JOBS on ships. Experience unnecessary. Complete information and employment instructions \$2.00. Transoceanic, Box 494-W, Baltimore 3, Maryland.

HONOLULU employers now actively hiring. complete list \$1.10. Pomeroy's, Three Campbell Block, Honolulu.

FOREIGN Jobs list. Guaranteed. \$1.00. Baile, Box 173, New Orleans 3, Louisiana.

SUNSHINE and economical living! Columns Florida jobs airmail, \$1.00. Evans, Box 4325, Fort Lauderdale, Florida.

PACIFIC Northwest jobs, business opportunities airmail \$1.00. Williamson E. 1420 16th, Spokane 33, Washington.

FOREIGN Employment construction work. If interested in foreign projects with high pay, write: Foreign Service Bureau, Dept. PS, Manhattan, New York.

DENVER Booming Help Wanted Columns Airmail Any Questions Answered \$1.00. Wheeler, P.O. Box 134, Denver 1, Colorado.

FOREIGN, Alaska, USA, Jobs! Earn to \$1500 monthly. Thousands of Americans employed overseas! Opportunities airmail. Latest copyrighted reports. Who to write, how to apply, paying job. Laborers—Trades—Truck Drivers—Equipment operators—helpers—clerks—engineers—many others. Over 12 countries. Free kit, \$1.00. Project, Spain, Latin America, Northern Projects, Europe, Pacific, etc. Year reprints—advertisers. Free kit, \$1.00. Information forms. Unconditional money-back guarantee. Act today! Only \$2.00. Airmail. 25¢. COD's accepted. International Reporter, St. Louis 1-SO, Missouri.

NEW YORK for highest salaries. Help wanted ads from America's largest Sunday Classifieds. Airmail \$1.00. Dunleavy, 225 E. 18th, New York 3, New York.

WORK and live in beautiful, exotic Miami. Jobs, houses, apartment sales and rentals, classified sections Miami newspapers. \$1.00 return letters. 25¢ cards 10¢ monthly rates upon request. Your personal Representative, Fritz Terwilliger, P. O. Box 219, Miami Springs, Florida.

FLORIDA help wanted columns airmail \$1.00. Name city wanted Bishop, 3801 Leeman Avenue, St. Petersburg, Fla.

JOBS Paying To \$550 weekly now available on overseas and American projects. Men and women in all trades. Job placement paid. Free information. Write Transworld, Dept. 51, 200 W. 34th St., New York 1, N.Y.

CLASSIFIED section Sunday paper \$1.00. Letters remained 25¢. H. Campbell, 200 W. Clarendon, Dallas, Texas.

43 AGENTS WANTED

YOUR own business—Suits \$1.50; Overcoats 65¢; Mackinaws 35¢; Shoes 12¢; Ladies' Coats 30¢; Dresses 15¢. Enormous profits! Catalogs Free. Nathan Portnoy Associates, 605-J West 12th Place, Chicago 7, Illinois.

AGENTS—300¢ profit selling genuine gold window letters; stores and offices. Free samples. Mailbox Sign Letter Co., 431-E North Clark, Chicago.

GOLD or Silver letters, numbers. Windows, Doors, Trucks 1" to 6" 500¢. Profits—Free Samples. Atlas-U, 544 West 79th, Chicago 20.

START Your Own Business On Credit. Your own boss. 1135 Dealers sold \$5,000 to \$100,000 in U.S. and foreign. No listing on credit. 200 home necessities. Sales experience unnecessary. Pleasant future. Equipment backed by world's largest industry. Write Rawleigh's, Dept. B-U-PSC, Freeport, Illinois.

NEW Jobs open in selling! Send name, address for five free issues of Opportunity Magazine. Money-making business. Listing hundreds of companies who'll pay you well full or part-time. No experience needed. Opportunity, 850 N. Dearborn, Dept. 18, Chicago, Illinois.

BUY Wholesale thousands nationally advertised products at big discounts. Free Wholesale Plan. American Buyers, Hertel Station, Buffalo 16-LI, N.Y.

GOLDMINE Of 600 money-makers. Copy Free. Specialty Salesman Magazine, Desk 6-B, 207 N. Michigan, Chicago 10.

BUY Wholesale—25,000 items—Catalog 25¢. Matthews, 1472-A5 Broadway, New York City 36.

MONEY-Making Opportunity! Take big profits on world famous Patented Varieties Fruit Trees. Also Flowering Shrubs, Roses, Vines. Big Sales outfit. Free Star Bros., Desk 30126, Louisiana, Missouri.

NEW way to make money. Sell nothing. Don't even step out of your home unless you want. Let others do the work. Experience unnecessary. No money to pay. No money for stock. We ship your orders, paid by C.O.D. Catalogue, money-making machine. Absolutely free. Write: The Topval Corp., Lindenhurst 70, New York.

GET New Shirt Outfit Free make \$90.00 weekly on 5 average orders a day. Famous quality Males-To-Mehrs. Dress and sport shirts at \$3.95 up sell fast to all men. No experience needed. Full or part time. Terre Haute, Indiana.

MAKE Money at home as renewal headquarters for all magazines. Liberal commissions. No experience—no capital needed. Write: "Money-Making," Free Catalog, McGregor Magazine Agency, Dept. 510-A, Mount Morris, Illinois.

\$1,000.00 A month for making dramatic weight loss demonstration of amazing lightweight Presto Fire. Extensive free kit. Free chemical used by Airforce snuffs out fires instantly. Only \$3.95. Terrific commissions. Millions made. Free kit, Merit, 114 E. 32nd, Dept. 50-F, New York 16.

YOUR Own Wholesale Business With No Investment—Free Catalog. Jay Norris Co., 424 Broadway, New York 10.

RUN a Spare-Time Greeting Card and Gift Shop at home. Show friends samples of our new 1956 Half-Occasion Greeting cards and Gifts. Take their orders and earn up to 100% profit. No experience necessary. Costs nothing to try. Write today for samples on approval. Regal Greetings, Dept. 80, Ferndale, Michigan.

PROFITS to 150% selling finest Everyday Greeting Cards. New 21 for \$1.00 Full Cards, unusual Gifts, 129 fast-sellers. Valuable money-making business. No approval, Stationery samples Free. \$1.00 Gift Free for promptness! Creative Cards, 4401 Carnegie, Dept. 526-C, Chicago 23.

MONEY in minutes! Even beginners succeed in earning well. Write for free greeting line so beautiful, it sells by itself! Friends, neighbors—even perfect strangers want to buy. Assure them of your approval. Stationery samples Free. \$1.00 Gift Free for promptness! Creative Cards, 4401 Carnegie, Dept. 526-C, Chicago 23.

request Elmira's Fund-Raising Plan for Churches and Clubs! Elmira Greeting Card Co., Dept. 163, Elmira, N.Y.

EVERY man prospect. Request free sales kit. Show line of belt buckles, individualized with prospect's personal name and emblem, also transportation, police, fireman's badges. Choice of 100 designs. Hook-Fast, Box 1425-PS, Providence, R.I.

IF you want to earn money fast, I'll send you Free Sample Stocking Of newest stretch DuPont Nylon to sell. Write for pair. American Mills, Dept. 482, Indianapolis 7, Indiana.

MAKE money introducing world's cutest children's dresses. Big selection, adorable styles, low prices. Complete directions. Rush name. Harford, Dept. R-3341, Cincinnati 25, Ohio.

ANYONE can sell famous Hoover Uniforms for beauty shops, waitresses, nurses, doctors, children. All popular, miracle fabrics—nylon, dacron, orlon. Exclusive top quality. Big cash income, real future. Equipments, Inc., Hoover, Dept. B-101, New York 11, N.Y.

SUFFERING from Rheumatism—Arthritis? Lifetime proposition. Thermogenics, 3333 Neenah, Chicago 34.

WAXES Floors without "Wax." New Invention! No wax! No wax! No wax! International seller. Samples sent on trial. Kristee 83, Akron, Ohio.

TURN Your Spare Time Into Profits! Friends, neighbors, relatives buy these unusual gifts, gadgets, toys, hand-drawn, gift wraps, and greeting cards on sight. Over 800 terrific new items—up to 100% Profit! Send for sensational money-making Free Catalog now—start to make big money immediately! Samples on approval. Write Greetinglines, 4301, 37B Park Square, St. Paul, Minnesota.

POSTCARD Can Put You In A Fine Business! Complete line of Air Cushion shoes. Big steady commissions. No experience. Investing need big. Send order for Free Outfit. Mason Shoe, Dept. C5, Chippewa Falls, Wisconsin.

FREE! Beautiful Feather Pictures 200% Profit! Airmail \$0.25, Mexico City, D.F.

GREETING Cards—\$50.00 cash from 40 boxes sensational All-Purpose Greeting. Big money all year from special occasion. Write: "Greeting Cards," Send order for Eastern Star. Best Air-Ocean Assortment, Stationery, Gifts, Bargain Specials. Color Catalog. Samples on approval. Midway 1113, Washington, Dept. 100-J, St. Louis 1, Missouri.

GET Into The Big Money! Sell work uniforms that advertise to factories, garages, institutions, businesses. Prospects, profits galore! Write big Send order for styles, colors, actual fabrics including miracle fabric, Acrylic, Dynel, Topps, Rochester 28, New York.

THIS Ad Worth Money To You! Make big profits spare time or full time. Sell over 600 unusual gifts, gadgets, greeting cards, stationery, toys, hand-drawn, and neighbors. No big investment. Samples on approval. Write for big Free Catalog. Write: "Ad Worth Money," Send order for organizations or individuals. North Star, Dept. 372, 251 E. 5th St., St. Paul 1, Minn.

CALENDARS, Advertising Novelties, Matches. All styles, including Religious, Varnishes, 25¢. Send order for Advertising Novelties, Book Matches, etc. Fleming Calendar Co., Promotional Division, 6538 Cottage Grove, Chicago 37, Ill.

FREE Deodorizer. Over 100% profit showing newodor-Zone disinfectant to homes, restaurants. Write Norwich Chemical Company, Dept. 5, Norwich, Conn.

BIG Money-making opportunity. Exclusive line work uniforms, jackets, pants, shirts, coveralls. Advertising big embroidered. Every business prospect. Outfit Free. Master Div., 671 Water, Ligonier, Indiana.

PROFIT with your own wholesale, name brand catalog. Appliances, watches, jewelry, gifts, toys. Write for free catalog cover. Full or part-time sales. Details free. Robel Sales, Dept. P.S., 487 Broadway, New York 10.

MAKE Money selling Outstanding line of regular ties, Square Ends, reversibles, leather, plated, Bows, Knitted, Kerchief Sets. Free samples. Write: "Ties," 20 W. 22nd, Dept. 416, New York 10.

MAKE \$60.00 easily showing newest Lat-Occasion Greeting Cards. Religious, Deluxe, 21 for \$1.00, notes, comic, photo Cards—Airmail \$1.00. Write for Big-Sized gifts. Samples on approval. \$1.25 prompt action gift. Cardinal, 1402 State, Cincinnati 14.

WILL you wear new suits and topcoats without one penny cost and agree to show them to friends? You can make up to \$30.00 in a day even in spare time, without carrying a stock. Write: "Suits," 150 E. 43rd, 6th and Throop Sts., Dept. N-1226, Chicago 7, Illinois.

MEN, Women. Make money spare time plus New Cash as Bonus for Encouragement. Amazing hosiery. Guaranteed to wear without holes, snags, and runs, or replaced Free. For example, lovely 60 gauge nylon dress socks, 10 for \$1.00, 11½ years, or replaced free. Write Wilkint, 2662 Washington, Greenfield, Ohio.

POPULAR SCIENCE OPPORTUNITIES

IS \$50.00 a day worth a postcard to you? Urgently need salesmen to fill big demand for new Futureline Auto Safety Belts. We give you everything needed to start your earning quickly. Write Futureline, Dept. W-17, 173 W. Madison, Chicago 2, Illinois.

LOOK! \$50.00 - \$75.00 - \$100.00 extra money! Show friends new true hair parchment, photochrome, humorous greeting cards. Unusual all occasion Easter assortments, home and gift novelties. Profits to 100%. Bonus. Write today for Feature boxes on approval. Free samples Personal Stationery, New Publishers, North Abington 233-K, Mass.

CASH in on 1956 elections! Big advance comm. selling low priced Union Label political posters, cards, Labels, 2x3x4 matches to candidates. Complete printing line for all businesses. Free Kit, National Press, North Chicago 3, Illinois.

CALIFORNIA sweet smelling beads, sensational sales parties. Particulars free. Mission, 2328-P West Pico, Los Angeles 6, Calif.

EASY handwork makes fast-selling articles. Sample free. Sunmade Company, Brockton 64, Massachusetts.

60% PROFIT on cosmetics—Famous national advertised Hollywood Cosmetics sell 60%! Make \$25.00 a day! Write today for free samples, details, write Studio Girl, Glendale, California, Dept. 1162G.

EARN \$30 A Day! Sell Dab-It, amazing pocket-size, acid, "ring" remover. Works like magic! Guaranteed! M & M, PS-22, 842 Third Avenue, New York 22.

DISTRIBUTOR wanted, high earnings. Agent-service, P. O. Box 1039, New Haven, Connecticut.

\$50.00 WILL earn \$10,000. Long needed inention. Free sales plan. Big profit. Send no money. Details free. Write Cyclo, Dept. 104, 3816 Dahlia Street, Denver, Colorado.

FREE catalog Ladies' Hand-Tooled Handbags, wallets, etc. Garza, Apartado 82, Tampico, Mexico.

AMAZING discovery, Master Glaze, puts brilliant glass like surface on glass. Free sample, information. Big commissions. Master Glaze, Dept. 848, 7720 Harwood, Milwaukee, Wisconsin.

BIG MONEY! Buy wholesale, sell retail. Dresses, children's wear, family apparel. Lowest factory prices. No stock to carry. Write samples free. Write for more actual fabrics free. C. E. Israel, Dept. R-3704, Cincinnati 25, Ohio.

CLEANS Windows without mess. Strange "dry" cleaning-cloth. Reps. book, liquids. Windows gleam. Samples sent on trial. Kristee 82, Akron, Ohio.

EARN TO \$50.00 per day! New, amazing chemically-treated Foam-O-Cel! Sponge cleans rugs, upholstery like new. Fast \$1.00 seller, big profits. Free details. M & M, Dept. PS-2, 842-3rd Avenue, New York City.

GIVE away plan pays you to \$5.00 hour! Your customers receive choice of wonderful gifts (silverware, hosiery, electric shavers, etc.) free with purchases! Show huge line with famous brands like West-Burnham, International, etc. Unbreakable dinnerware, hosiery, shirts, underwear, etc. Nothing for you to buy. Just write orders. We deliver. No inventory. Also weekly payment club plan. Pocket advance cash plus big cash bonuses. Opportunity become manager, appointing salespeople. Experience necessary. Full or spare time. Nothing to pay now or ever. Postcard brings you complete information. Write out, free. No obligation. Denmark, Dept. 14, 108 Lawrence Street, Brooklyn 1, New York.

6.75 NATIONALLY advertised Perfume. Closeout price 60c. Sell for \$3.00. Profit \$2.40. Sample \$1.00. Details, advertisement reprint. Essif, 73-14M 175 Flushing 66, New York.

FREE Folios "55,000 Vacations." Work home—sparetime! Haylins-PSS, Carlsbad, California.

USED and new watches, \$2 up. Free List. Southern Watches, Gray, Georgia.

\$50,000.00 IN 5 years. Man Wanted—Join our top salesmen averaging over \$10,000 a year. Many have made over \$100,000. No investment. Earnings in advance. (If you live in Canada write Dept. 88, P.S. 25, 2500 Yonge Street, Leaside, Ontario, In U.S. President, Dept. PS2, P.O. Box 711, Fort Worth 1, Texas.

WHOLESALE Catalog! Appliances, cameras, watches. Postcard: Selbyco, Denver 265, Illinois.

SCHOOL Seniors. Be Popular With Classmates. Have Spending Money Galore. Write Free. Craftcards, Box 235-M, Pittsburgh 18, Penna.

\$1.00 PROFIT selling \$2.95 photo enlargement offer. Allen Studio, Relgier Bldg., Little Rock, Arkansas.

FREE book "505 Odd, Successful Businesses." Work home! Pacific-38C, Oceanside, Calif.

STAY Home! Get \$10.00 Merchandise or \$25.00 cash for \$5.00. Everything Supplied. National, Box 88, Rochester 22A, Mass.

GOOD Man Can make \$3,000.00 next 90 days. Every house in town wants amazing Nille's glowing curbside house numbers. Automatic selling plan pays profits every day. Write today for details. Free Nillite, 173 W. Madison, Dept. 302, Chicago.

MAKE Extra Money. Sell front door name plates to friends, neighbors. Retail \$1.98—you make \$1.00! Free selling kit. Modern Engraving Co., P.O. Box 194, Boston 14, Mass.

44 HIGH-GRADE SALESMEN

AD MATCHES! Sell amazing designs—10, 20, 30, 40, and 240-light book matches. Bigger spot cash commissions; every business a prospect. Low prices for high quality. Details. Start without experience; men, women; full, part time. Buy nothing! Sales kit furnished. Match Corp., Dept. PS-74, Chicago 32, Illinois.

\$1,000.00 A month for making dramatic 3-second demonstration of amazing lightweight Presto Fire Extinguisher. New chemical used by Airforce snuffs out fires instantly. \$1.34. Details. Terlic Comm. Millions want it. Free Kit. Merlite, 114 E. 32nd, Dept. 50-F, New York 16.

ADVERTISING book matches—Cash in on big demand for Union label matches. Cuts for all businesses and political parties—Free powerhouse selling kit—low price—no experience, guarantee, repeat orders—cash commissions. Superior Book Co., Dept. P-255, 7530 Greenwood, Chicago.

45 EDUCATIONAL & INSTRUCTION

USED Correspondence Courses and Books sold and rented. Money back guarantee. Write for details. Lee Mountain, Pisgah, Alabama.

BE a Real Estate Broker. Study at Home. Write for Free book today. GI approved. Weaver School of Real Estate, 2018R Grand, Kansas City, Mo.

BOOKKEEPERS! Increase your earnings! Operate your own simplified "Dollar-A-Week" Bookkeeping and Tax Service. Full or spare time. Details Free. No obligation. Ellis, Box 203, Cedar Grove, North Carolina.

COMPLETE Your High School at home in spare time with 189-year-old school. Texts furnished. No classes. Diploma. Information booklet free. American School, Box 2346, Drexel at 56th, Chicago 97, Illinois.

PHYSICAL Therapy and Massage—We Train You at Home. Earn Big Profits from your own Private Practice of Work with Hospitals and Doctors. Free Catalog. National Institute, Desk 3, 159 East Ontario, Chicago 11.

STUDY For Doctor's degree of Psychology, Medicine, Divinity, and Correspondence courses only. College of Divine Metaphysics, Dept. P-S, 2811 North Illinois, Indianapolis 1, Ind.

WANT A Diesel Job? New Opportunity! Increase income. Higher Pay. More Money. We can help you qualify. Tools. Shop method home training. Write to: Diesel Tractor, Heat Exchanger Division. Interstate Training Service, Dept. A-2, Portland 13, Oregon.

EARN While You Learn Auto and Diesel Mechanics. Master this top paying trade. Many franchise earn \$100 a week and more. Approved for Korean veterans. For free information write Dept. No. 262, Nashville 16, Tennessee. Write to: Bobart Welding School, Box 2-261, Troy, Ohio.

VA contract. Best equipment. Catalog free.

QUALIFY for college equivalency degree. Increase opportunities for promotions, better pay. No courses. Bulletin 10. Cramwell Institute, Adams 7, Mass.

HIGH School—No Classes. Study at home. Spare Time. Diploma awarded. Write for Free Catalog HBA-52, Wayne School, 5247 W. 127th, Chicago 47, Illinois 18.

ANALYZE Handwriting. Earn up to \$10 an hour spare time. Teaching, counseling, TV, other fascinating fields. We need men, women Now to prepare for Tremendous opportunities in world wide field. Trial lesson with All the details free. Live age. IGAS, Inc., 509 Wilhoit Building, Cincinnati 2, Ohio.

USED Correspondence courses and educational books bought, sold, rented. Free Catalog. Educational Exchange, Menlo, Georgia.

OFFICE Automation: Prepare for the future with the only home study course instructing Application of Electronic Computers to Business Clerical Operations. Free information. Business Electronics, Computer Division, Box 3330 Rincon Annex, San Francisco, Calif.

WANT Security? More money? Get our manual "How to Get a Better Pay Job." It shows how! Includes successful application letters. \$1.00. Convincing proof of money. Many learn. Write today. Martinsville 2, Virginia.

BLUEPRINT Reading—train at home. Learn to read blueprints with confidence in 10 easy lessons. Write today. Belton School, 1039-H North Lawndale, Chicago 91.

GIRLS—Women, Practical Nurses needed. Learn profitable career at home easily. Many learn. Write today. High school not required. Free booklet. Write School, 2525 Sheffield, Dept. FH-32, Chicago.

HOW To write short stories, mysteries, articles. Learn at home for career or extra part-time income. Graham Doar sold on story to Post, CBS Radio and NBC-TV. Professors. Write for details. Send today for free lesson and book. Palmer Institute of Authorship, Desk UM-26, 1680 Stevenson Avenue, Croydon, Penna.

MEDICAL Laboratory Technicians in great demand. We train you in your own home. Catalogue free. Imperial Technical Institute, Box 973-B, Austin, Texas.

YOUR chance to earn big money. Become a real estate agent. Sell Training devices. Complete home course 12 lessons only \$10.00. W. Evans, 1407 N. 12th Street, Reading, Penna.

LEARN Mineralogy at home. Diploma course. Fortunes now being made in Uranium and other minerals. Free catalog. Mineral Science Institute, Desk 3, 159 East Ontario, Chicago 11.

OPPORTUNITY To earn \$15,000.00 or more annually. Business of your own. No selling nor merchandise to buy. Over 5000 persons operating these exclusive offices. Free booklet. Franklin Credit, Roanoke 2, Virginia.

A Dynamic Singing and Speaking Voice can be yours! Sell Training devices. Thrilling details! Canfield, 2188-C Fifth Avenue South, Minneapolis 4, Minnesota.

BOOKS. Free 1956 catalog, 100 pages. Texts, notes, educational, instructional subjects. Millions of names, new names added. Bargain prices. Books bought. Est. 1862. Long's Book Store, Dept. PS, Columbia, Ohio.

\$1,199.90 Was Paid to John Betts in few weeks. Grow Mushrooms. Cellar, shed. Spare, full time, year round. We pay \$2.50 lb. Free Book! Tuning School, Dept. 180, 2954 Admiral Way, Seattle, Wash.

HELP yourself! Solve personal problems by self-mastery. Free information. The Leavitt Science, Clinton 4, Illinois.

COLLEGE degrees—Independent study. Keep employed. Brentwood College, Box 19-121, Los Angeles 19.

WANT Strong, masculine voice? Send for Free booklet. Prefect Voice Institute, 210 South Clinton, Studio 2B-1, Chicago 6.

PIANO Tuning pays. Big money in spare time. Learn to tune. No 30. No musical knowledge necessary. Phonograph, records, tools and instructions furnished. Free catalog. Capitol Tuning School, 18 Southwest Second, Fort Lauderdale, Fla.

TRANSFORM yourself via subconscious dynamics. Free Amazing Brochure. Box 847 (A-2), Ocean Park, Calif.

POPULAR SCIENCE OPPORTUNITIES

U.S. Civil Service Tests! Training until appointed. Men-Women, 18-55, start high as \$377.00 month. Many jobs open. Qualify Now! Get Free 36-page illustrated book showing salaries, requirements, sample test. Write: Training Institute, Dept. N-22, Rochester, New York.

GUARANTEED . . . Become Policeman or Firefighter, for Free details write Pleasant, 1501 Kinney, Cincinnati 31, Ohio.

46 CONTESTS

PRIZE Contests provide Fabulous and Confidential Income Opportunity! Here's How and Where to Win Your Share! Send stamp! National Contest Bulletin, Box 2685-PS, Miami 16, Florida.

47 DETECTIVES

DETECTIVE Training. Phillips Secret Service System, 1917-C North Kenneth, Chicago 39, Ill.

DETECTIVES—Work home—Travel. Experience unnecessary. Detective Particulars free. Write Wagoner, P-125 West 86th, New York 24.

48 LANGUAGE OUTFITS

SPANISH Quickly! Recordings, Text-book, Special, \$6.95. Speed-O-Way, Box 32161, Los Angeles 32, California.

U.S. fun learning a language by Lingua-press. World Standard Conversations. Speak At home, quickly, easily learn to speak French, Spanish, German, Russian, Modern Greek—your choice of 34 languages. It's like living in another country. Complete Recorded Courses on Free Trial. Send for Free Book and Details. No Obligation. Try, Don't Buy! Lingua-press Institute, T-54-026 Rock Plaza, New York 20.

49 BUSINESS SERVICE INFORMATION NAME LISTS

INFORMATION on any subject. 41. Certified research! J. F. Griffith, Wynnewood 1, Pennsylvania.

51 SPECIAL SERVICES

DETROIT'S Help Wanted ads airmailed \$1.00. Smith, 4071 Lawrence, Detroit 4, Michigan.

LATEST N.Y.C. Classified Telephone Directory. Ferguson Research, 116-14 141 St., South Ozone Park, N.Y.

52 AUTHORS SERVICE

NO luck finding a book publisher? Write for Free Booklet: P.S. Vanatage Press, 120 West 31st, New York.

WANTED: Book manuscripts—all subjects considered. Greenwich Book Pub. (Attn. Mr. Ibsen), 489 Fifth Ave., N.Y.C.

BOOK and publication printers—lowest cost. Catalog from Adams Printery, 30 West Washington, Chicago 2, Illinois.

ARTICLES Published. Fiction, Nonfiction, Confidential. Inquire: Auread, 156 West 73rd Street, New York City.

53 ADVERTISING AGENCIES, ETC., FOR ADVERTISERS

FREE expert assistance for mallorder advertisers. Ratebook leading newspapers, magazines, radio. Chicago Advertising Agency, Chicago 4.

ADVERTISE—24 words. 100 Canadian Newspapers \$3.50. Lists Free. Advertising Bureau, 10311-P Springfield, Chicago 43.

54 CARTOONING, SIGN PAINTING, CHALK TALKS

'HOW To Make Money With Simple Chalk Talks'— book everyone who likes to draw should have. It is free; no obligation. Simply address Cartoonists' Exchange, Dept. 192C, Pleasant Hill, Ohio.

CARTOONIST. Amateur, Professional. Prepare for animation with Max Fleischer's plan. Write Vera Coleman, 60 East 42nd Street, New York, N.Y.

YOU can Entertain with Chalk Talks. Catalog 10c. Cartoonist Balda, Oakshosh, Wisconsin.

BEGINNING Cartoonists! Prepare and mail magazine cartoons professionally. Instructions \$1.00. Cartoon Service, 1001 East 5th Street, Alice, Texas.

PAINT Signs—Master die cut. outline letter patterns. Complete assortment, 11½ to 12" high, prepaid \$2.00. Eyerly, P-383, Newton, Iowa.

56 RUBBER STAMPS & OFFICE SUPPLIES

POCKET Rubber stamp. 3 lines, self inked, plastic case. Only \$1.00 air mailed, postpaid. Hadfield Stamps—205 W. Crossing, Houston 18, Texas.

RUBBER Stamps. professional one day service. 15c Word up to hundred, minimum \$1.00, cash or check. Hawthorne Company, Chicago, Michigan.

GOODYEAR Rubber first line 60c. additional line 30c. Printex, Roanoke 12, Virginia.

RUBBER Stamp Catalog Free! Jos. Abernathy—Mail Div., Barnesville, Georgia.

DISTINCTIVE. attractive name and address stamp, \$1.00. H. Manley, Box 6027, Philadelphia 14, Penna.

GUARANTEED Quality. deep letters lasting years. 3 lines \$1.00. Extra lines 25c. Stamp-it, Box 9032A, Chattanooga, Tenn.

3 LINES, \$1.00. Fast Service, Catalogue. Johnston, 443 McDougal, Brooklyn 33, New York.

57 PRINTING MULTIGRAPHING, ETC.

SENSIBLY Priced Business Printing. Special! 250 8½"x11" letterheads, bond, and 250 110 heavyweight envelopes, \$6.95. Rush, 1000 N. 1st, Minneapolis 1, Minn.

QUANTITY. guaranteed. Free samples, quotations. Sparks Co., Box 4086, Austin 31, Texas.

OFFSET printing. \$6.50-100.00. 8½"x11, 14 in. 1000 Letters, 1457 Broadway, New York 36.

"HOW to Buy and Use Printings"—Free booklet tells how to cut costs, choose the right printer. Free samples and prices included. R-K Press, 825 Powder Mill Lane, Penfield Downs, Phila. 31, Pa.

POSTERS. Signs, Banners, Decals, Catalogue. Write: Wandrie, Frazer, Minnesota.

BUSINESS Printing. Illustrated Catalog Free. Howprint, 723-W Eunice, Webster, Grates 19, Missouri.

INEXPENSIVE. colorful Printing. Convincing Samples Free. Hughes Services, Shillington, Penna.

500 8½"x11 LETTERHEADS \$3.50 postpaid. 10% discount on first order. Scribner's, RD3, Ithaca, N.Y.

\$1.00 100 ENVELOPES or letterheads. Postpaid. Poor Boy PS, Box 1055, Little Rock, Arkansas.

OFFSET—Saves dollars! Samples, prices. Free. Litho-Press, Madison, Tennessee.

QUALITY Mimeographing. printing. Free catalog. Currier, PSM, New Lebanon Center, N.Y.

FREE Catalog Business Personal printing. D M Press, Sebastopol, California.

AMERICA'S Finest Economical printing. Illustrated catalog. Siebenberger Press, P.O. Box 29, New York 20, New York.

500 3¼" FOUR line gummed stickers 50c. Red Border \$1.00. Moritz Printer, Sackinaw, Michigan.

100 LETTERHEADS (8½"x11) Printed neatly \$1.00 postpaid. Envelopes same. Blue or black ink. Stark Press, Capitola, California.

STATIONERY. business printing. Fast service, quality, samples. Haines Press, Petersburg 3, Mass.

WHOLESALE Printing—Letterheads, address cards, blotters, service ads, shipping labels. "000"—\$1.95. Postpaid! 20% Discounts listed. Redprint, Ojai, California.

100 EMBOSSED Business Cards, \$2.95. 23 Kinds Available. Samples. Jaynar, Box 73A, Oak Lawn, Ill.

58 PRINTING OUTFITS, SUPPLIES

DO your own printing. Save money. Simple rules. We supply everything. Print your own goods. Reclaim printing, engraving, too. Have home shop. Details free. Kelsey Presses, V-8, Meriden, Conn.

MAKE your own self-molding rubber stamps and printing cuts. Plexiburr, 722 W. Wisconsin.

PRINTING presses, type, supplies. Lists 3c. Turnbaugh Service, Mounted Route, Mechanicsburg, Pennsylvania.

59 PATENT ATTORNEYS

INVENTION Record form free and "Patent Information Every Inventor Should Have" Carl Miller, Registered Patent Attorney, 204 North Building, New York.

INVENTORS: Learn how to protect your invention. Unless the inventor is familiar with patent matters, he should engage a competent registered patent attorney or agent to represent him. We are registered to practice before the U. S. Patent Office and prepare and handle all the details of your patent matters. "Patent Guide for the Inventor" containing detailed information concerning patent protection and procedure with "Record of Invention" form will be forwarded to you upon request—without obligation. Clarence A. O'Brien & Harvey Jacobson, Registered Patent Attorneys, 622-A District National Building, Washington, D. C.

INVENTORS: Without obligation, write for information explaining the steps you should take to secure a Patent. John Randolph, Registered Patent Attorney, 207 Columbian Bldg., Washington 1, D. C.

C. A. Snow & Co.—S-427. Snow Building, Washington 1, D. C. Registered Patent Attorneys. Write for information.

INVENTORS— do you believe you have an invention you should put out how to protect it. The firm of McMorrow, Berman & Davidson with offices in Washington, D. C., is quite capable of assisting you in steps for you. Send for copy of our Patent Booklet "How to Protect Your Invention."

We will also give you an "Invention Record" form. No obligation. They are yours for the asking. McMorrow, Berman & Davidson, Registered Patent Attorneys, 33-M Victor Building, Washington 1, D. C.

INVENTORS— Send today for instructive booklet "Patent Protection for Inventors" giving details of patent protection and outlining preliminary steps to take toward patent protection,—also "Evidence of Invention" form. Write: Berman & Co., 214-B Merlin Building, Washington 6, D. C.

PATENTS— Irving L. McEachern, 316 McEachern Bldg., Washington 1, D. C. Registered Patent Attorney.

"INVENTOR'S Guide" and "Record of Invention" free on request. Frank B. Ledermann, 1501 K St., N.W., Washington 5, D. C.

INVENTORS: When you are satisfied that you have invented something of value write me, without obligation, for information as to what steps you should take to secure a Patent. Write Patrick D. Beavers, Registered Patent Atty., 938 Columbian Bldg., Washington 1, D. C.

60 FOR INVENTORS

INVENTORS. If you have an invention for sale, patented or unpatented, write Institute of American Inventors, Dept. 30A, 631-E St., N.W., Washington 4, D. C.

INVENTORS: Without obligation, write for information explaining the steps you should take to secure a Patent on your invention. John Randolph, Registered Patent Attorney, 206 Columbian Bldg., Washington 1, D. C.

INVENTION Record form free and "Patent Information Every Inventor Should Have" Carl Miller, Registered Patent Attorney, 204 North Building, New York.

INVENTORS— Send for free patent information book and inventor's record. Registered Patent Attorney, Associate Examiner, Patent Office 1925-1926 Patent Attorney & Advisor. Navy Department 1930-1947, Gustave Miller, 26PSI Warner Building, Washington 4, D. C.

INVENTORS: Learn how to protect your invention. Unless the inventor is familiar with patent matters, he should engage a competent registered patent attorney or agent to represent him. We are registered to practice before the U. S. Patent Office and prepare and handle all the details of your patent matters. "Patent Guide for the Inventor" containing detailed information concerning patent protection and procedure with "Record of Invention" form will be forwarded to you upon request—without obligation. Clarence A. O'Brien & Harvey Jacobson, Registered Patent Attorneys, 622-A District National Building, Washington, D. C.

INVENTIONS— And Patents Promoted. A-1 service for inventors for many years. Write Adam Fisher Co., 5418 Idaho St. Louis, Missouri.

SAVE Money on your patent application. Patents for any country. Free details. International, 25 McMaster, Toronto, Canada.

POPULAR SCIENCE OPPORTUNITIES

INVENTORS—If you believe you have an invention you should find out how to protect it. The firm of McMorro, Berman & Davidson with offices in Washington, D. C., is qualified to take the necessary steps for you. Send for copy of our Patent Booklet "How to Protect Your Invention." We will also send you an "Invention Record" form. No obligation. Patent attorneys for the asking. McMorro, Berman & Davidson, Registered Patent Attorneys, 143-L Victor Building, Washington 1, D. C.

INVENTORS—This firm is registered to practice before the United States Patent Office and available to assist you in the preparation and prosecution of your patent application. "Patent Protection for Inventors" booklet containing detailed information and steps to take toward patent protection sent promptly upon request. No obligation. Victor J. Evans & Co., 242-B Merline Building, Washington 6, D. C.

FREE information on selling inventions. Vanite Tom, Box 5008-E, Detroit 35, Mich.

FREE Invention Protection Form airmailed. Patent Office search plus advice on selling your invention. \$5.00. Inventors Bureau and Engineering Bureau, Box 4973, Washington 8, D. C.

FREE Patent Booklet and Record of Invention on request. H. Lawrence Blasius, 15 Park Row, New York City.

SEARCHES—Put your patent searches in the hands of a Registered Patent Attorney or Agent as he qualifies to give a worthwhile patentability report. Record of invention form upon request. Information on patent protection. Patrick D. Beavers, Registered Patent Attorney, 939 Columbian Bldg., Washington 6, D. C.

"INVENTOR'S Guide" and "Record of Invention" free on request. Frank B. Ledermann, 154 Nassau Street, New York 38, New York.

WOULD like to exchange ideas and information with fellow inventors. Box 9378, Akron, Ohio.

SEND \$3.00 money order for diagram and information of almost any invention worth thousand of dollars. Kris Astford, Lundar, Manitoba, Canada.

INVENTORS: Our invention promotion service is guaranteed. No obligation. Plan and guarantee. Kessler Corporation, 72P1, Fremont, Ohio.

PATENT Searches, including copies of nearest patents. \$6.00. Reports airmailed within 48 hours. More than 100 registered patent attorneys use my service. For Free invention protection forms, write Miss Ann Hastings, P.O. Box 176, Washington 4, D. C.

PATENT Searches \$5.00. 48-hour service. Free Invention Protection forms. Write Raymond L. Smith, Patent Searches, 620 Sheraton Building, Washington 5, D. C.

PATENT Searches \$5.00. 48-hour airmail service. Invention Protection forms free. Write Patent Engineering Service, 711 14th Street, N.W., Washington 5, D. C.

61 INVENTIONS WANTED

INVENTIONS wanted. Patented: unpatented. Tremendous market. Write: Global Marketing Service, 2420 77th, Oakland 5, Calif.

WE are interested in new products. If you have an idea, invention, or product we will finance it, giving you full protection. No advance fee charged. Only letters of interest answered. Send details today. National Research and Development Corp., Dept. S, 11 West 42nd Street, N.Y.C.

INVENTORS: Hundreds of manufacturers have requested our assistance in locating marketable new products. Complete information free. Institute of American Inventors, Dept. 300, 631-E Street, N.W., Washington 4, D. C.

INVENTIONS wanted now by my Manufacturer-Clients. Patented. Unpatented. Send for Free Form "R". Adams, Patent Broker, 80 Wall Street, Financial District, New York City.

THE promotion agency for patented and unpatented inventions. Full particulars. Form, Guide, Recording, and local superior. 338-342 North Rodeo, Beverly Hills, California.

INVENTORS Don't sell your invention Patented or Unpatented. Get the best offer, write Cowgill, Box 298, Marion, O.

INVENTIONS Wanted. Patented or Patent Pending. 25 years experience. Promotion. National Research Bureau, 3122 Meramec, St. Louis 18, Mo.

CASH Buyers for ideas and inventions. Write National Inventors Institute, 457 Munsey Building, Washington 4, D. C., or 4900 Euclid Avenue, Cleveland 3, Ohio.

INVENTORS: If your invention is adaptable to promoting we will contract for cash or royalty. If not, we will sell it for you. Special booklet free. Kessler Corporation, 721W, Fremont, Ohio.

62 PATENTS FOR SALE

"SAFE Key Locker" answer lost key problems, homes, autos, etc. Patent 2,672,043. Want offer information? Write: H. J. Geary, 1190 Geary, San Francisco 15, California.

63 MANUFACTURING

INSTRUCTIONS "How to Manufacture, sell products successfully." Jarro, Box 268-CA, New York 5.

64 MODELS, MODEL SUPPLIES

SHIP and yacht model fittings: blueprints. Send \$5 for illustrated catalog #29 listing hundreds of items. A. J. Fisher, 1002-2 Etowah Ave., Royal Oak, Mich.

NEW TrueScale Ship Model Kits cut building time to one-quarter—more detail than ever with castings and pre-cut fittings. Includes hull and plans, brass mounting pegs, new simplified plans, parts keyed and numbered, genuine wood decks and creasers. (No plastics). Send 10¢ for brand new color 22 page booklets. All Collectors' Items. Marine Models, Dept. 562, Halesite, Long Island.

SHIP Models. Most complete line in New England. Kits, fittings, plans, books, tools, engines, motors. Illustrated catalog 25c. James Bliss and Co., Inc. Dept. PS, 342 Atlantic Avenue, Boston 12, Mass.

SHIP Model kits and numerous fittings from authentic plans including clippers, trawler, fishermen, frigates, privateer, radio control tug, etc. Send 25c for our Free 1966 catalog. Model Shipways, P.O. Box 39 West Fort Lee Road, Bogota, N. J.

SHIP Models and yacht supplies. Complete. Large 68 page catalogue 50c. William W. Ship, Dept. 15C, New York City 9.

"G-T" Steam engine castings, fittings, boat plans, catalog 15c. Ship Models Ltd., 186 Summer, Andover, Mass.

RAILROADERS set 1956 Catalog—Reference manuals. O Gauge scale. tinplate 50c. Terminal Hobby, 269 Erie, Milwaukee 2, Wis.

BIGGEST most complete illustrated model railroad catalog. 850 cast items. HO and G 10c. Selley, 144 Clay, Winter Park 15, Florida.

STEAM engines, boilers, castings. Catalog 25c. Anton Bohaboy, 2297 Price, Rahway, N. J.

65 HOME CRAFTSMAN

ALL Crafts. Supplies. Large Free Catalog. National Handicraft, 199 William St., New York 38.

PLASTICS home-craft course for Men and Women. Tells and shows how to make hundreds of fast selling plastics products. All plastics and material for 23 projects included in course. No special tools needed. Course pays for itself. Write for Free booklet. Interstate Training Service, Dept. D-2, Portland 13, Oregon.

LEATHERCRAFT. Send 10¢ for new 60-page guide of tools, supplies, and projects including metalcrafts, enameling, ceramics, all other crafts. Complete stock. Reasonable. Write: Leathercraft, Dept. P-2, 1111 N. 3rd, Milwaukee, Wis.

BUY wholesale nationally advertised power, hand tools, thousands other products at big discounts. Free Wholesale Price American Buyers, Hertel Station, Buffalo 16-R1, New York.

FREE "Do-It-Yourself" Leathercraft Catalog. Tandy Leather Company, Box 121-N13, Fort Worth, Texas.

WOODWORKING for home craftsmen. Twenty-two manuals. Over 1,000 pages. 75 training projects. Only complete home training program available. Carefully written, profusely illustrated. Covers everything in cabinet making from wood selection to final finishing. Complete instruction in care and use of all hand and power tools. Prepared by manual training instructors. Write for free booklet. Interstate Training Service, Dept. G-2, Portland 13, Oregon.

LEATHERCRAFT, metal enameling, beadcraft, shellcraft, metal tooling, textile painting, many other crafts. Free big illustrated catalog. Kit Kraft, Dept. 332, Studio City 1, California.

FREE. Complete illustrated catalog. Leathercraft kits, supplies. Also big Metalcraft catalog. Write now for either or both. J. C. Larson Co., Dept. 5652, 820 South Tripp, Chicago 24.

39 FULL size Jig Saw patterns of beautiful designs. Many other toys. Write: Plus "How, Where to Sell" Only \$1.00. Mastercraft 24S, 7041 Olcott, Chicago 31, Illinois.

FREE catalog. 1560 Patterns and Designs. Craftplans, 1321-B South Michigan, Chicago 5.

SQUAREKNOTTERS: Make belts, handbags, lanyards, dog leashes, etc. Special offer! Beginner's book, catalog and quality cord samples 15c. P. C. Herwig Co., Dept. 71-P7, 39 Henry St., Brooklyn 1, New York.

JIGSAW, Bandsaw owners, let your machines bring extra profits, fun. Free details. Nu-Art, Box 2238, Boston, Mass.

FREE Craftsman's reference books. Free Patterns, samples, gifts. Write. Spaadco, 412-G Portland, Rochester 5, New York.

ALARM—Home fire simple inexpensive plans \$1.00. Epco, Box 135, South Norwalk, Connecticut.

WOODCRAFTERS—We buy what you make from our patterns, easy to make, no special tools needed, send \$1.00 for patterns and complete instructions. Write: J. W. Rice, 188 Pine Street, Kingston 24, N. Y.

KNOCKDOWN cedar chest and lumber free price list. Bedford Lumber Company, Shelbyville, Tennessee.

VIOLINMAKERS. Amateurs. Professionals. From European Wood. Complete materials, tools, instructions, patterns. Illustrated Catalogue 10c. Premier Violin Supplies, 147th SVP, 430 South Broadway, Los Angeles 13, California.

DOWEL Price list and useful information free. Queens Dowel House, Rosedale, New York.

WOODWORKING Trade Tricks. Simpler, quicker carpentry and cabinetmaking methods revealed. Free details about amazing book. Write Craftsman, 115-TB North Street, New York City.

129 NEW full-size jigsaw patterns. Artist-drawn. \$1.00. Craftplans, 1321-B South Michigan, Chicago 5.

66 BUILD IT YOURSELF

ALUMINUM window brackets. Make your own awnings. Save 60%. Use siding. Write Reflecto, Ravenna, Ohio.

GRANDFATHER clock shoptechnical plan—thousands built. Kuempel Klox, Minneapolis 16.

GREENHOUSE Plans. Construct your own greenhouse. Designed for durability, economy, and attractiveness. Diagrams and complete instructions and material list. \$5.00. Sequoia Greenhouses, 1790 W. 11th, Eugene, Oregon.

DO you build yourself like grandfather? Get plans for the most modern structure. The best. The cost \$2.00. Strobel Structure, Rockaway Beach, Calif.

GEIGER Counter and Metal Detector Kits. Inexpensive. Educational. Free Literature. Electronic Applications, 5024 Lee Hwy., Arlington 7, Va.

MA-Kit-Yourself Gem Tumbler Blueprint, materials list, instructions. \$1.00 postpaid. Write: Ashmore, Box 676, Pearl City, Illinois.

AMAZING. Shrinks wood. Say Good-bye to stuck doors, windows, drawers. Bottle size. Write: Applications, 273-0 Lake Drive, Berkeley 5, California.

COMEDY patterns for children's rooms. \$1.00. Bronze Portraits, 309 Lowden Street, Pawtucket, R.I.

PLANS! Build any size garden tractor. Write: Allco, 216 S. Wisconsin.

67 OLD GOLD JEWELRY, WATCHES, ETC.

COSTUME jewelry supplies. Catalog and samples. 3rd largest line in America. Minsky-Fair Co., G.P.O. Box 1328, New York City 1.

POPULAR SCIENCE OPPORTUNITIES

RHINESTONES. Jewelry settings, copper enameling, hobby kits. Illustrated catalog 10c. J. & M. Novelties, Dept. CB-4, Griffith, Indiana.

HIGHEST Cash For Old Gold. Broken Jewelry, Gold, Federal Reserve Diamonds, Silverware, Spectacles, Platinum. Free information. Satisfaction Guaranteed. Rose Riners, Hewitt Bldg., Chicago 2.

WANTED old gold, broken jewelry, rings, dental gold, Platinum, silver, coins, stamps. Sage, Poplar, Mt. Carmel, Pennsylvania.

USED and new watches. \$2 up. Free List. Southern Watches, Gray, Georgia.

QUALITY Jewelry findings and exquisite stones make the most beautiful jewelry. Our latest catalog, V. Catt Co., Inc., 210-J Fifth Avenue, New York 10, N. Y.

SENSATIONAL new rickrack and kimp jewelry. Illustrated instructions, samples, and wholesale catalog hundreds of jewelry supplies 10c. Polson's, 11 Oakland St., Medford 35, Massachusetts.

68 TOBACCO & PIPES

PIPE Smokers! Cigar Smokers! Free illustrated catalog offers fabulous savings on choice imported and domestic pipes, cigars, tobaccos, supplies. Write Walli Frank, Dept. 26, 130 Nassau Street, New York 38, N. Y.

69 FOR THE HOME

FOAM rubber furniture cushions—Factory seconds 50% discount. Free catalog. Orma-Foam, 429A Central Ave., East Orange, New Jersey.

DAY-GO House Numbers. Free color selector. Edward Cook, Martin Avenue, Saratoga Springs, New York.

CREAMY sweet milk; at 13c! Secret 35c. Straughan, B-448, Campbell, California.

70 OF INTEREST TO WOMEN

MAKE money addressing envelopes assembly. Glenway, 5713 Euclid, Cleveland 3, Ohio.

ENVELOPE addressing facts—extra income opportunities revealed thru HM service. Free details. Maxwell, Dept. 83-2, Cleveland 14, Ohio.

EMBROIDER Stamped Linens. Buy direct from Manufacturer and save. Send for Free catalog. Dept. 952, Merrick, 16 West 19th Street, New York 11, N. Y.

WANT To Make Big Money At Home? \$5 profit in an hour possible with invisible Reaveing. Make tears, holes disappear from clothing, fabrics. Steady year-round demand from cleaners, laundries, homes. Details Free. Fabricon, 8336-S Prairie, Chicago 19, Illinois.

HOMB Sewers Wanted! Earn extra cash making read-cut ties, experience unnecessary. No selling. We instruct. Write details: Jud-San, 518 E. 105th, Dept. B-25, Cleveland 8, Ohio.

I stopped having colds 8 years ago. Why suffer? Rush 1.00 for my amazing secret without delay! Decker, 749 N. El Centro, Los Angeles 38, Calif.

A dress shop in your home. No investment. Good living. Mommy Makeovers. Modern Manner, Hanover Vt., Penna.

\$5,199.90 Was Paid to John Betts in few weeks. Grow Mushrooms. Cellar, shed. Spare, full time, year round. We pay \$3.50 lb. Free Book. Mushrooms, Dept. 181, 2884 Admiral Way, Seattle, Washington.

71 FOR SALE MISCELLANEOUS

UNCLAIMED cleaned—pressed—men's shirts \$5.00, dozen. Fairview, 2447A So. Boulevard, New York City.

GOODYEAR Pure Gum Rubber 1/16 x 36 inches, any width, 50c per inch. Sample dime. Edward Wendt, Jr., 28, Marshfield, Wisconsin.

72 WANTED TO BUY

SCRAP Mercury (Quicksilver) containers supplied. Tantalum—Blamuth-Tungsten. Metallurgical Products Co.—Established 1909, 35th & Moore Streets, Philadelphia 48, Pa.

QUICKSILVER. Mercury. Silver Solders, precious metals. Sterling Terminal, Norwood, Massachusetts.

73 WEARING APPAREL

DRESSES 24c; shoes 39c; men's suits \$4.95; trousers \$1.20. Better used clothing. Free catalog. Transworld, 167-C Christopher, Brooklyn 12, New York.

74 RAZOR BLADES, SHAVERS

CAR Radio runs electric shaver! 11 Adapter only \$2.98! Guaranteed! R.E.N. & Fisher Mfg. Co., 3803 White Oak Avenue, Encino, California.

WETNESS Razor Blade Sharpener. Sharpen leather strops double-edge blades. Use one blade Months! \$3.50 paid. Send for literature. Black Forest Imports, 749 Lucretia Ave., Los Angeles 28, Calif.

SINGLE Edge blades, 40—\$1.00. Free! 70 assorted needles with purchase. Ingalls, 1688 St. Anthony, St. Paul 4, Minnesota.

FREE—100 Double Edge Razor Blades, to new customers. Randolph Co., Box 3406-A, Detroit 3, Michigan.

75 TATTOOING SUPPLIES

TATTOOING Outfits, licensed course. Brochures 25c. Zeis, 728 Leslie, Rockford, Illinois.

76 ARTISTS SUPPLIES

FINEST German drawing instruments and slide rules. Factory prices. Catalog. Crivell's, Box 147-F, Joanna, South Carolina.

77 GEIGER COUNTERS & TREASURE FINDERS

GOLD, Silver, Metal Detectors, Geiger Counters for Uranium, Mineralights. Sensational new fully guaranteed models. None Filter. Information Free. Deteccon Corp., 5321 Vineland Ave., North Hollywood, California.

SELECTIVE metal and mineral detector. Revolutionary design. Distinguishes metals from black magnetic sands. Readily detects metals under salt water. Also Geiger Counters. Free literature. Gardiner Corp., 2515 E. 25th Ave., Indian School Rd., Phoenix, Arizona.

TREASURE—Metal—Mineral locators M-Scope type. Latest electronic design \$75.00 up. Geiger counter, scintillation \$125.00 up. For uranium prospecting \$35.00 up. Fully guaranteed. Monthly payment plan available. Books: How to Be a Successful Uranium Prospector. "For Fun and Profit"—Literature free upon request. Fisher Research Laboratory, Inc., Palo Alto, Calif.

FIND Buried Treasure, gold and silver, with Goldak's sensational 3 1/2 lb. "Finder-1" locator, only \$49.50. Write for free literature on complete line of mineral, metal locators: Goldak and scintillation counters. Goldak, 1540 W. Glenoaks Blvd., Glendale, California.

GEIGER Counters (3)—Universal Atomic Brand new—list \$150.00 each—Sacrifice \$100.00 Each. H. Vogel, 2039 Bway, N. Y.

URANIUM. Gold, silver treasure. New, power-packed, highly sensitive Metal Detector. Geiger Counters and Mineralights Kit and Assembled Models from \$12.50. Lightweight, guaranteed, free literature. Electronic Applications, 5924 Lee Highway, Arlington 7, Va.

URANIUM: Radioactive analysis of rocks, Clays, Sands, \$2.00 per sample. Red Hill Uranium Ltd., 809-B Miles, Redford, Texas.

URANIUM Finding made easy! Completely transistorized. Geiger counters available for first time. Extra sensitive. Write for free information, forms, brochures. Universal Atomic Corp., Dept. PS2, 19 East 48th Street, New York City.

NEW. Uranium detector kit, \$8.49. Free catalog. CMG, Box 611-FS, Laramie, Wyo.

78 WATCH REPAIRING

WATCHMAKERS—"Jewelers" Supplies. Instructions. Catalog 20c. Bengal Company, Culver City, California.

WATCHMAKERS' Tools. Materials. Supplies. Watches. Catalog. Gales, Box 1000, Chicago 90, Illinois.

WATCHMAKERS' Journal contains instructive articles on watch repairing. \$1. year. Sample copy 20c. Dean Company, Box 218-A, Dayton, Ohio.

USED and new watches, \$2 up. Free List. Southern Watches, Gray, Georgia.

WATCH and clock repairing books. Free information. North American, Dept. 26B, 2320 N. Milwaukee, Chicago 47, Illinois.

79 MISCELLANEOUS

BUY Wholesale thousands nationally advertised products at big discount. Free "Wholesale Plan." American Buyers' Herald Station, Buffalo 16-VI, New York.

PAINT With-Fire! Glowing black light colors. Different as day from night because you literally paint with light! Water color paints, black phosphor fluorescent lamps. Free literature today for Dealer's Idea Packet. Black Light Corporation of America, San Gabriel 5, California.

NEW kind, low, inexpensive, homemade, wind-vacuum windmill stores plenty power. Instructions \$1. Ziemba, 1-6123 Orchard, Dearborn, Michigan.

NEW invention projects life-size color pictures with any flashlight. Free details. Jovilio, Room 106-PS, 4145 Broadway, Chicago 13, Illinois.

WHOLESALE Catalog! 30-80% Discounts! Appliances, Musical Instruments, Typewriters, Phonographs, Watches, Jewelry, Records, Housewares, etc. Consolidated Distributors, 21-18 Lafayette, Paterson 14, New Jersey.

BIG 10% return. Beautiful Mahogany or Aspen Wood cases, \$9.50 postpaid. Woodcraft, 82 Brigham Rd., Worcester 9, Mass.

THOUSANDS Nationally Advertised Brand name products, including new 1956 Automobiles—discounts to 80%. Meder, 530-PS Fifth Avenue, New York 36.

"TEXAS Brags," 64 pages of rib tickling tales of Texas. Also rayon Texas flag, 10c. Includes with slided staff and desk stand. Send \$1.00. Crown Co., Box 122, Rosebud, Texas.

CESSPOOLS, septic tanks, outhouses cleaned, deodorized by miracle non-toxic enzymes—less than 1 hour. Free details. Systems, saves annual pumping, etc. Lasts 9 to 12 years. Small cesspools cost \$2.50, medium \$4.50. Free literature. Free details. Free literature. Also catalog on 1,000 items used by cesspool and drain cleaning contractors. Electric Drain Cleaning Co., P.O. Box 224, Alhston 34, Mass.

\$5,199.90 WAS Paid to John Betts in few weeks. Grow Mushrooms. Cellar, shed. Spare, full time, year round. We pay \$3.50 lb. Free Book. Mushrooms, Dept. 181, 2884 Admiral Way, Seattle, Washington.

GERMAN address lists. Anything manufactured 25c. Burke Associates, Manchester 2, N. H.

PARKING Tickets! First time offered. Place our little sticker on your windshield. It could save you a parking ticket. Order today, send 25c in coin to Box 1016, Chatham, Ontario, Canada, for two.

CIGARETTES—Roll 20 for 9c, guaranteed to please. Fats free. Pete Moberly, Box 796, Owensboro, Kentucky.

RECEIVE Magazines, samples, catalogues, Messengers everywhere. Offer hundreds. Get listed 25c. Rorick, Box 86-M, Cincinnati 26, Ohio.

300 Big Mails guaranteed. Samples, offers, plans, opportunities, monthly listings, \$1.00 refundable. Wright Publications, 2276 Hubbard, Memphis 8, Tenn.

GAMBLING systems exposed! Professional gambling secrets revealed! Complete analysis of scientific gambling methods never before published, only \$1.00 postpaid. Bill Parry, 611A Elm St., El Cerrito, California.

BOOKS on antiques and their prices. Free circular. Warman Publishers, Uniontown, Penna.

INITIALS, gold shield Background, 14c. decal. Messengers everywhere. Crest Enterprises, 351C, Augusta, Georgia.

BUY Wholesale 750,000 Products. Details Free. Carter, Box 6011-G, Chicago 80.

EXPERT logical analysis of arguments. 50 words \$1.00. Henry W. Wizer, A.M., Ph.D., Georgetown, Kentucky.

AFRICAN Glassclay, blackwood, ivory, exquisite souvenirs, details: Severino, Box 709, Beira, Mozambique.

80 PERSONAL

PSORIASIS Victims: Hopeless? New Discovery! Free Trial Offer. Write Pkacoil, Box 338-S, Cleveland, Ohio.

"HOW Can I Find Out?" You Can! Information confidentially developed. Any matter, person, problem. World-wide. Officially licensed. Established 1922. William Herman, 170 Broadway, New York.

DETECTIVE'S Opportunities. Detective particulars free. Write, Wagoner, P-125 West 86th, New York 24.

BORROW By Mail From Postal Finance Co. Employed Men and Women can easily obtain \$50 to \$600 Fast, Entirely By Mail. Repay in small monthly payments. Friends, relatives, employer, tradespeople will not know you are applying for loan. Advice occupation, amount wanted. Postal Finance Company, 200 Kresline Bldg., Dept. 13B, Omaha, Nebraska.

"VICTORY Through Faith", sent free. Allman, 90 Coral Street, Paterson 2, New Jersey.

BORDER Bulletin! Co-publish this little magazine for \$1 per month! Your thirty word advertisement free! Sample details \$1. Border Bulletin, 910 Marion, Pharr 17, Texas.

22,000 \$MART, close-mouthed, ordinary Americans make really big money in a unique way. Internal Revenue Department states. Fascinating folder, free. Fontel, Dept. 12, 210 Fifth Avenue, New York 10, N.Y.

LETTERS Remailed 25c. Dawn Service, Box 228, Jeneau, Alaska.

JOBS council problems. One Dollar, Box 211, Inkwood, Calif.

NORTHWEST Remails \$25. J. Geist, 3155 S.E. 80th, Portland 6, Oregon.

CANADA Remails 25c. Classifieds \$1.00. 5 scenic views \$1.00. Bush, 1254 E. 8th, Vancouver, British Columbia.

DANDRUFF must go if you use Dana's fast growing medicated cream oil. results or money back. 8 oz. bottle \$1.00. Da-Na-Wa, Schuyler, Nebraska.

LATEST Methods treating piles, fistula, Stomach disorders. Write for free book. McCleary Clinic and Hospital, E244 Elm St., Excelsior Springs, Mo.

"INTERESTING Mails"—25c keeps your mail box full three months. Bentz, Desk-M/66, Chatawa, Mississippi.

REMAILING—Letters 25c; cards 5c. Royal Service, Box 3201-CS, Denver (16), Colorado.

SAN Francisco all California cities Sunday complete classified help wanted real estate \$1.00 each. Write Carolyn, 70 San Leandro Way, San Francisco 27, Calif.

LETTERS mailed from anywhere in U.S.A. 50c. Specify postmark desired. Box 972, Santa Barbara, California.

DON'T be embarrassed with pimples or blackheads. Clear them up easy, fast with Dermaclear. Details free. The May Company, 1120-D Main Street, Lynchburg, Va.

GENIUS or dupe—which one are you? Find out! Confidential intelligence test gives exact "I.Q." Score it yourself! Only \$1.00. University Testing Service, 4912 Reid Way, Sacramento 19, California.

ARTHRITIS, rheumatism. Muscular aches. Japanese medical plaster that relieves pain. Samples 25c. Box of 22 sheets \$2.00. Universal Trading Co., 112 Mulberry Street, New York 13, New York.

MAIL Received—Forwarded. \$3.00 month. Hedgpath, Box 530, Alhambra 24, California.

RULE Others with thoughts. (Full course.) \$2.00. Delmar Wisdom, 846-S6 Sunnyside, Chicago 40.

DETROIT Remails 25c. Four Detroit Pchards \$1.00. Remiled Free Sunday's News Help Wanted Classifieds Airmailed \$1.00. Walters, 9229 Pierson, Detroit 28, Michigan.

FOR help on personal problems; friendly, helpful advice. Send Details \$1.00. The Counselor, 502 Walker Building, Washington 5, D.C. Information free.

MEXICAN Legal Matters. A. Espejo, Box 217, Tijuana, Mexico.

SEND your friends or yourself free ripened oranges and grapefruit from Florida. 1/2 bushel \$4.50, 1 bushel \$6.50, 1/2 box \$6.00, 1 box \$9.00. All prices include delivery charges, delivery west of Mississippi add 10¢.—Free jar tropical jam with each item. Money order or check, no C.O.D., send for free price list on many other package combinations. Caribbean Shippers, 3801 N.W. 64th Avenue, Miami Springs, Florida.

DENOMINATIONALISM does not necessarily lead to the truth. Personal study is the only alternative. "What it really means to give your life to Christ" by a working Santa Fe engineer is approached from an unusual angle; it is a beautiful, well made, 96 page book and sells for \$1.00. Order from C. E. Rehorn, 1315 Oak Street, Clovis, New Mexico.

MEXICAN Law, General Practice At- torney, Apartado 79, Juarez, Chih. Mexico.

Bass Fishermen will Say I'm Crazy .. until they try my method!

But, after an honest trial, if you're at all like the other men to whom I've told my strange plan, you'll guard it with your last breath.

Don't jump at conclusions. I'm not a manufacturer of any fancy new lure. I have no reels or lines to sell. I'm a professional man and make a good living in my profession. But my all-absorbing hobby is fishing. And, quite by accident, I've discovered how to go to waters that everyone else says are fished out and come in with a limit catch of the biggest bass that you ever saw. The savage old bass that got so big, because they were "wise" to every ordinary way of fishing.

This METHOD is NOT spinning, trolling, casting, fly fishing, trot line fishing, set line fishing, hand line fishing, live bait fishing, jugging, netting, trapping, seining, and does not even faintly resemble any of these standard methods of fishing. No live bait or prepared bait is used. You can carry all of the equipment you need in one hand.

The whole method can be learned in twenty minutes—twenty minutes of fascinating reading. All the extra equipment you need, you can buy locally at a cost of less than a dollar. Yet with it, you can come in after an hour or two of the greatest excitement of your life, with a stringer full. Not one or two miserable 12 or 14 inch over-sized keepers—but five or six real beauties with real poundage behind them. The kind that don't need a word of explanation of the professional skill of the man who caught them. Absolutely legal, too—in every state.

This amazing method was developed by a little group of professional fishermen. Though they are public guides, they rarely divulge their method to their patrons. They use it only when fishing for their own tables. It is probable that no man on your waters has ever seen it, ever heard of it, or ever used it. And when you have given it the first trial, you will be as closed-mouthed as a man who has suddenly discovered

a gold mine. Because with this method you can fish with in a hundred feet of the best fishermen in the county and pull in ferocious big ones while they come home empty handed. No special skill is required. The method is just as deadly in the hands of a novice as in the hands of an old timer. My method will be disclosed only to those few men in each area who will give me their word of honor not to give the method to anyone else.

Send me your name. Let me tell you how you can try out this deadly method of bringing in big bass from your "fished out" waters. Let me tell you why I let you try out my unusual method for the whole fishing season without risking a penny of your money. Send your name for details of my money-back trial offer. There is no charge for this information, now or at any other time. Just your name is all I need. But I guarantee that the information I send you will make you a completeskptic—until you decide to try my method! And then, your own catches will fill you with disbelief. Send your name, today. This will be fun.

ERIC H. FARE, Libertyville 18, Ill.

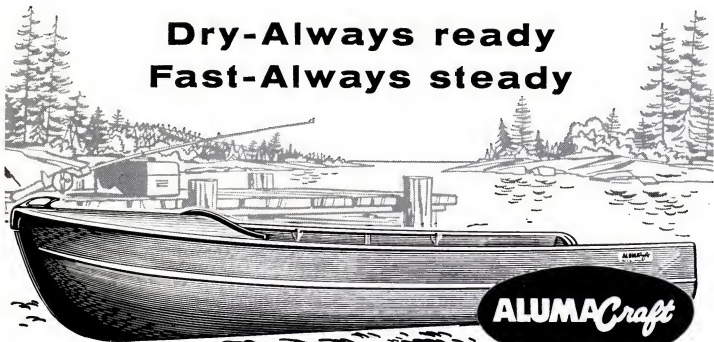
Eric H. Fare, Libertyville 18, Illinois

Dear Mr. Fare: Send me complete information without any charge and without the slightest obligation. Tell me how I can learn your method of catching big bass from "fished out" waters, even when the old timers are reporting "No Luck."

Name.....
Address.....
City.....Zone.....State.....



Dry-Always ready Fast-Always steady



ALUMACraft

Genuine Erich Swenson designs assure easy planing... top speeds... smooth performance... stable ride. Fine Aluma Craft construction assures extra strength... positive flotation... long life. Always ready... no work... no painting. Never soaks up water... never dries out and leaks. Easy to own on easy terms. Select from 18 models, the right boat or canoe for your use.



See your dealer or send for beautiful, full color catalog.

ALUMA CRAFT BOAT COMPANY

2627 27th Avenue South, Minneapolis, Minnesota



GUNS 12 MODELS "AUTHENTIC REPLICAS"

START YOUR COLLECTION TODAY!

Colt Cobra .38

Newest firearm in Colt line, compact in design. Used by detectives and police officers throughout USA where quick action is paramount. Six shot.

One of the most versatile weapons ever made. Carried by officers as side-arm. Semi-automatic. Could be fitted to special stock and used as rifle.



German 9MM Luger

- Reproduced in Actual Size, Design and Balance.
- Made of Solid Cast Aluminum
- Finished in Gun Metal Black
- "He-Man" Trophies for Den, Rumpus Room, Cabin, Etc.

ONLY **\$3⁰⁰** each POSTPAID

Canada Orders Not Accepted

MAIL TODAY!

(Please Print)

LYTLE NOVELTY CO.,
2656-52 Fashion Avenue, Long Beach 10, California
Enclosed is \$..... (No Stamps or COD's). Please send by return mail the guns I have listed:
NAME.....
ADDRESS.....
City & Zone..... State.....
The Colt name and 95 Silver Tone

COLLECTION INCLUDES:

Russian Tokarev
German Luger
Czechoslovakian Pistol
Italian Brevettata
German Mauser
Japanese Nambu
Spanish Moxley
Belgium Automatic
German P-38
Frontier .44 Colt
Colt .45 Automatic
Colt Cobra .38

SEND 10c IN COIN
FOR ILLUSTRATED FOLDER

SPUTTERBUG

"WORKED FINE TILL A MUSKY STOLE IT"



—writes C. D. Gilchrist, Tallmadge, O., who took this string of bass at Omamee Lodge, Pigeon Lake, Ont., on a 5/8-oz. Sputterbug. Weights ran to 6-1/4 lbs. This new floating lure has a large head spinner that makes a terrific commotion on the surface when reeled in fast. Retrieve slow for paddling sound. Can be fished in jerks like a popper.

Many different effects possible by working your rod. Spinning and light tackle size (1/4 oz.) or bait-casting size (5/8 oz.)—\$1.35 each. Choice of 9 body colors. Rubber Hula Skirt.



NOISY
TOP-WATER
LURE

FREE WRITE TODAY FOR YOUR BIG FREE ARBOGAST COLOR CATALOG OF BAITS—FULL OF PICTURES OF CATCHES

FRED ARBOGAST COMPANY, INC.
2362 WEST NORTH STREET • AKRON 3, OHIO

Catalog of 3200 Novelties, Jokes, Tricks



Send 10c today for this amazing new catalog of 3200 novelties, gadgets, tricks, jokes, funmakers, hobbies—and thousands of things you never knew existed—never knew where to get! Hundreds of useful items, too, including office & household timesavers, educational hobbies, jewelry, optical & sports goods, etc. Partial contents:

Jokes	Puzzles	Watches	Live Animals	Music Instruments	Print: Presses
Knives	Tools	DISGUISES	Fencing Supplies	Auto Accessories	Engines & Motors
Wigs	Books	Telescopes	Fishing Supplies	Bike Accessories	Pennants
Suede	Models	Headsets	Hula Skirts	Artists Supplies	Emblems
RINGS	Plants	Timesavers	Science Items	Imported Goods	And Many
Games	Movies	Funmakers	Handcraft	Whips	Other Things
Novels	Knives	Exorcisers			
Cameras	Toys	Chameleons			
Pipes	Masks	Microscopes			
Banks	Knives	Magic Tricks			
Boats	Racers	Projectors			
Planes	Hobbies	Good Goods			
Stamps	Gadgets	Cigaret Novelties			
Coins	Jewelry	Optical Goods			

"Most Unusual Catalog in World"

Colliers, Coronet, New Yorker, Tide & other magazines wrote about this interesting catalog. More fun than carnival, circus, world's fair & science exhibit all in one. SEND 10c WITH YOUR NAME & ADDRESS FOR YOUR COPY to:

Johnson Smith Co., Dept. 178, Detroit 7, Mich.

Here's 10c. Rush me New Catalog!

Johnson Smith & Co., Dept. 178, Detroit 7, Mich.

Name _____

Address _____

The Catalog Featured on Cover of "Mad" Comics

100X Area Magnifying Projector

— Enlarges Pictures, Printing, & Objects! — Full Color!

NEW! Electric Magna-Vue Optical-Infrared projector enlarges clippings, pictures, sketches, objects in full natural color, correctly & readable. Project on wall, screen or table. **MAGNIFIES 100 TIMES** Enlarges any material up to 3 1/2x4-in. to 32x40 in. For home, school, class, business, sketches any from any copy. Enamelled steel, 10x7 1/2-in. high. Quality focusing lens. Operates on standard 110 volt current. Money back guarantee. Price Postpaid, **\$4.98**

JOHNSON SMITH CO., Dept. 178, Detroit 7, Mich.

POWERFUL ELECTRIC GENERATOR

Cost Over \$20.00 Now! While They Last. \$3.95

Generates Up To 75 Volts. Use to generate electricity to ring bells, light up lights, as a medical battery, deliver terrific electric shock as joke, many electrical experiments, classroom uses, etc. Cost over \$20 now. Used but excellent operating condition. Hand crank or gear wheel drive. Made by leading electrical companies. Each has 3 or 4 and 1-1/2 lb. bar magnets (alone worth more than total cost), generating armature, wire leads, rear crank, ready to use. Originally used in crank phones. Complete unit weighs over 10 lbs. Postpaid \$3.95. Over 1000 miles from Detroit send \$4.95, otherwise shipped express charges collect. **JOHNSON SMITH & Co., Dept. 178, Detroit 7, Mich.**

PORTABLE CAR COVER

Heavy Vinyl Plastic (formerly \$8.95)

Protect Against RAIN
• SUN • DUST. \$6.95

Long-lasting plastic, folds compactly, off and on in a jiffy, sturdy elastic binding gives extra security. State make, model and year—buy direct from mfr. Send \$6.95 plus 35¢ postage or sent C.O.D.

BEA SALES, Dept. G-34, 125 E. 46th St., New York 17

SOCK-O
SUPER SLINGSHOT
SILENT-RIFLE FAST-POWERFUL-ACCURATE
Great for small game and target shooting! 45 pound pull. Big, sturdy barrel. Live rubber rubber. Sweet shooting. Free! 50 "Sock-O" "cannon balls", extra rubber and target sent by retail mail. Guaranteed. Every sling fully tested. No COD's please.
SOCK-O, 7000 Melrose, Los Angeles 38, Calif.

Tremendous Profits
with Hagen's Exclusive
TEAR GAS PENCIL!
100% PROTECTION
This Tear Gas Pencil discharges smothering clouds of tear gas to instantly stop, stun and incapacitate the most vicious man or beast, an effective substitute for dangerous firearms! leaves no permanent injury. No selling experience necessary. Sell it immediately! soon you'll sell it full time. Start now! Send \$4.95 for complete demonstrating kit of Automatic Tear Gas Pencil, 10 demonstrators & 3 Powerful Tear Gas Cartridges. Not sold to minors.
HAGEN SUPPLY CORP., Dept. P-26, St. Paul 4, Minn.

Genuine Western 4-PLY Hand-Made Leather
Train Animals, Petal Self Defense
Loud Noise Like Bang of a Shot Gun!

PLAITED BIG BULL WHIP

Experts knock ashes off cigaret, gun out of hand, yank people off feet, etc. Used by trainers, ranchmen, etc. Grip lightly (pressure is on loop), then crack or coil snake out or back; overhand, underhand, side-arm. Neat's all finished for pliability & long life. "Cracker" or tongue on end. Solid grip handle with loop.

6-ft. Whip \$1.98; 8-ft. Whip \$2.69;
JOHNSON SMITH & Co., Dept. 178, Detroit 7, Michigan

Pellet Shooting Automatic

Shoots 10 pellets as fast as you pull trigger. For indoor target work & fun. Automatic action. Holds 10 pellets. Full size model of Colt 45, 6 1/2-in. long. Plastic moulded. Movie parts of die cast metal. With supply of pellets. (Extra Pellets, 25¢ Pkg. Holster 50¢) EACH. **\$1.65**
Johnson Smith & Company, Dept. 178, Detroit 7, Mich.

Add the For Big Novelties Catalog Described Above

TREASURE HUNTERS
New type metals detector. Distinguishes metals from black magnetic sands. Ideal for locating gold nuggets, placer deposits. Detects metals under salt water. Locates coins, jewelry on beaches. Free from false detections. Free literature. Gardiner Electronics Company, Dept. P, 2548 E. Indian School Road, Phoenix, Arizona.

NEW BENJAMIN SUPER CO2 GAS CARBINE - \$16.50
HI-LO (2 Stage) Jet Power Cal. .177 or .22
SAFE - ECONOMICAL - ACCURATE
CONVENIENT - PRACTICAL - NON TOXIC
EASY TO OPERATE - NO PUMPING - NO FLINCHING.
Get 40 SHOTS from each 10¢ STANDARD SIZE CO2 (Soda) CARTRIDGE. Up to 4" penetration.
FREE Folder
BENJAMIN AIR RIFLE CO.
852 MARION ST., ST. LOUIS 4, MO., U.S.A.

See the Greatest Show on Earth with this GIANT ASTRONOMICAL TELESCOPE
\$15.00 FULL PRICE
Delivered ready to use. Has 45X, 75X and 100 power individually mounted eyepieces with brass focusing tube plus sun projector lens for observing sun spots and solar storms. Steel telescope tube 50 in. long, 1 1/2 in. dia. tripod adjustable to any height. Steel forked mounting with closely machined aluminum tripod head assembly assures extra fine adjustment. This professional type instrument provides full power with clear vision at all times. See the moons of Jupiter, our own moon, planets, myriads of stars, star clusters, etc. All for only \$15.00 FOB Mattituck. C.O.D. orders require \$5.00 deposit. Satisfaction guaranteed. 45X and 400X eyepieces available at \$2.00 ea.
BUFFOLK SCIENCE SERVICE
Dept. TP-2
MATTITUCK, N. Y.
FEBRUARY 1956 89

FREE!

How to Become a
GAME WARDEN -
GOVT. HUNTER
or Join Forestry,
Fishery or
Wildlife Services!

Prepare NOW—at home spare-time, for a stimulating, outdoor career. It's easy, fun—enjoyable as reading your favorite outdoor magazine. Let your love of field and forest guide you to real *success, happiness*. Work with nature's creatures amid scenic surroundings, away from pressures of city life. **EXCELLENT OPPORTUNITIES—HELP FILL DEMAND IN YOUR AREA!**

Compare These Exciting Advantages:
NO SPECIAL SCHOOLING NEEDED. You don't need a college education, even a High School Diploma, for many fine beginning positions. Hunting, farming, military experience, common skills—all help to get most outdoor jobs! **AGE NO HANDICAP.** Positions open to men between 17 and 45 years of age.

GOOD PAY, SECURITY. Start at up to \$3000 year. Annual increases. Experienced men earn up to \$6,000—\$12,000.

PRESTIGE. Command the respect of others! Your uniform symbolizes the vigilance needed to conserve America's precious resources.

LOW-COST HOUSING. Retirement income on many jobs. Choose from govt., private employment. Opportunities galore!

FREE! Large, colorful success booklet. Tells, **EXPLAINS** complete facts, **PLUS** how to get **FREE "Select-A-Job" Chart.** Lets you match background, interests, with many outdoor jobs. **Fill-out and mail coupon now—TODAY!**

Home Study Institute, Dept. N-2
1036 S. La Brea, Los Angeles 19, Calif.

Rush me **FREE "Job Opportunity" booklet & FREE "Select-A-Job" Chart** details.

Name _____ Age _____
Address _____
City _____ Zone _____ State _____

**MASTER THE EASY ART
OF SURE-DIRECTION DRIVING**

**DRIVE BY
HULL AUTO COMPASS**

Be sure it's a Hull
—far famous fine
instrument accuracy,
LASTING dependabil-
ity. Used by hundreds
of thousands. At better
dealers everywhere.
Write for free literature



Beaconite
REGISTERED
TRADE MARK
ESTABLISHED 1945

HULL MFG. CO., P.O. Box 246, E-2, WARREN, OHIO

make it with **60¢** of sand & cement
SELL IT FOR \$2000

every home a prospect for
these patented **"LIFETIME"**
CONCRETE INCINERATORS

Make big profits manufacturing rust proof, fire proof, almost indestructible concrete incinerators in your own backyard or garage... full or part time. Sell to home-owners, hardware, department and garden supply stores. Philo. manufacturer doing big volume with Sears, Roebuck, large department stores. Easy to follow instructions and all needed equipment supplied. Exclusive protected franchise—No competition! Territories going fast. Write immediately for full details. Dept. PS-26, T. C. TOR. 2113 Bellevue St., Phila. 40, Pa.



Kruger Pistol Bargain \$3.00
post paid

.12 CALIBER SINGLE SHOT

.14 MG. POWDER CHARGE

Crafted after famous German Luger design. Not an air or CO₂ gun. This is a small bore gun that actually shoots .12 caliber lead bullets fired by light 14 mg. powder charge. Beautiful gun... swell for target shooting. 4" steel barrel in knurled styrene stock. Overall length 8 3/4 inches. This amazingly low price due to ball and cap design. Direct factory-to-you sales. Comes with 50 bullets. Send for extra bullets or available at stores. Money back if not satisfied. Limited quantity. Delivered free. Send \$3 cash, check or money order to **KRUGER CORP** KRUGER BUILDING, BOX 44-5, ALHAMBRA, CALIFORNIA

POW!!! hunting slingshot

- accurate—powerful—silent
- kills small game, pests
- hits like a rifle

\$150
postpaid
(no cod's)



order today from — **I. J. STONE** DEPT. A-2 1616 Oak St. Santa Monica, Calif.

FREE GERMAN HUNTING KNIFE



4-INCH BLADE

We give you handiest hunting and fishing knife you've ever had! Has 4-INCH LONG highly tempered steel blade—VERY SHARP! Attractive handle. We send knife **FREE** to acquaint you with our new-wholesale bargain. Please send 25¢ for handling. **NO LIMIT**—but send 25¢ handling for each knife. Order **TODAY!** **HUNTING KNIFE, Dept. K-79, Box 881, St. Louis, Mo.**

STATION WAGON OWNERS

NOW you can replace rotted, worn-out wood trim on your 1952, 53, 54 Ford or Mercury with Lifetime **FIBERGLASS**. Do it yourself in less than one hour. Simple to install; no special tools or know-how required. Order direct from manufacturer... available in either the original wood-grain finish or specify body color. **SEND NO MONEY—SHIPPED C.O.D. only \$175.00**

SPINKS 3151 N.W. 36th Street, Miami, Florida



FIREARMS & SWORDS

You don't want to miss our new thrill-packed catalog. Fascinating background and illustrations of 8000 authentic pieces. Exceptional values in hard-to-find items. For your 175 page catalog #29 simply send 50¢ to cover postage and handling with your name and address.

ROBERT ABELS, Box P5, 860 Lexington Ave., New York 21, N.Y.

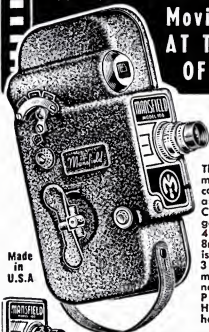
SAVE 1/2 on WATER SKIS

\$18.00



Simply assemble and finish our new water ski kit and you have a pair of skis worth twice the price of the kit. Skis are 7 ply moulded plywood, 67 1/2" long, 7" wide, 3/8" thick. Sturdy rubber foot pieces. All parts plus instructions included—\$18.00. Order from your Michigan dealer or **MICHIGAN WHEEL CO., Dept. PS-2, Grand Rapids, Mich.** C.O.D. orders accepted.

now . . . for the first time
THIS 100 FT. SPOOL LOAD **MANSFIELD 16mm**
Movie Camera
AT THE PRICE
OF AN '8'



Made
in
U.S.A.

with f/2.5 lens
only **\$49.95**

This all metal, precision made Mansfield Camera costs you \$50 less than any other 16mm Movie Camera in America. You get sharp, clear pictures 4 times the size of an 8mm camera. Operation is easy and fool-proof. 3 speeds including s-l-o-w motion. Easier, more economical spool loading. Push button control. Handy attached carrying handle.



THE ONLY CAMERA
with a 25 FT Remote Control Cable
Enables person shooting pictures to get
into own movies and still control the
film footage. Only \$9.95 extra.



FOR SALE AT ALL

SEARS ROEBUCK or MONTGOMERY WARD Stores
or order direct from ILLINOIS MERCHANDISE MART
1227 W. LOYOLA AVE., CHICAGO 26, ILLINOIS

Daisy Gun Book

Ready for Boys and Dads



DERINGER PERCUSSION POCKET
PISTOL (Only about 4" long; one of
many famous guns shown in this book)

You'll enjoy seeing the historic rifles,
pistols pictured in gun section of Daisy's
new 128-page pocket-size Gunbook! A
gun collector authority wrote each gun
story. Also contains western lore, ranch-
cowboy cartoons, jokes, comic strips plus latest
Daisy Air Rifle Catalog. All only 25¢ including
FREE ARROWHEAD CHARM. HURRY! Send Coupon.

HOW TO START A JUNIOR BB GUN CLUB

16-Page Brochure tells how any junior,
adult or group can start a club—based
on the Junior 15-foot (range) spring-
type air rifle marksmanship program
of National Rifle Association. Only 10¢.

DAISY MANUFACTURING COMPANY

Dept. 1926, Plymouth, Michigan, U.S.A.

- ☐ 25¢ enclosed. Send Gunbook, Charm, Catalog
postpaid.
☐ 10¢ enclosed. Send Junior BB Club Brochure
postpaid.

NAME

ST. & NO.

CITY

STATE

Arrowhead!
Charm
FREE
with
Book!



"IT COULD ONLY BE A

Shakespeare WONDEROD"

THE
STRAIGHT-FIBER
GLASS ROD WITH
THE SPIRAL
MARKINGS



Feel the Difference!

Only Shakespeare, using the patented
Howald Process, laminates thousands
of parallel glass fibers compactly, under
tension, so they run *straight and continuous*
from butt to tip—for strength!
No crisscrossed or ground-off strands.

ACTION Built-in

Wonderod has the
slimmest-strongest
tip possible . . . vibrant and lively, for "catapult-
action" casting; responsive, to work the bait.

POWER Built-in

Here is "back-
bone" that lets the
rod do the work. Springy glass fibers cast for
you—and stand the gaff to fight the fish.

ACCURACY Built-in

The faster, more
responsive tip un-
erringly puts lure or bait where you aim. No
wishy-washy sway. You cast more accurately!

No. 1266 SPIN-WONDEROD

You'll feel the difference the moment you pick
up this beauty. White rod, dressy winds, Car-
bolyol top. Choice of light action or
medium action; lengths, 6'6" or 7'... **\$2250**

No. 1266

Free! NEW 1956 "TIPS AND TACKLE" BOOK-PAK
WITH POCKET FISHING CALENDAR

Catch more fish! These 4 new books show
ways to fish, where to find 'em, tackle for:

SPINNING • BAIT CASTING
FLY FISHING • SALT WATER

SHAKESPEARE COMPANY

Dept. PS-2, Kalamazoo, Michigan.

Please send, FREE, new 1956 "TIPS AND TACKLE"
booklets and Joe Godfrey pocket fishing calendar.

Name

Address

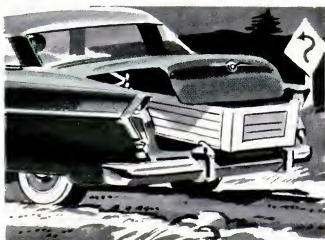
City

Zone

State

FEBRUARY 1956 91

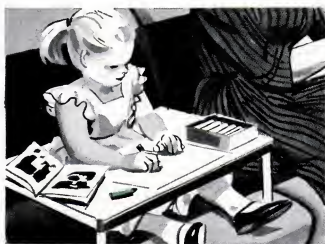
I'd Like to see them make...



CAR-TRUNK LIDS that could be locked in any open position. Then they wouldn't bounce when left partly raised to carry bulky loads.—*D. M. Davenport Jr., Burlingame, Calif.*



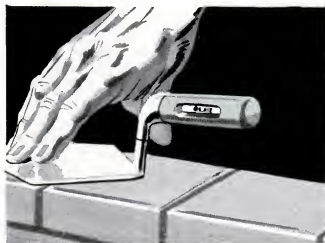
SUGAR-AND-CREAM CUBES that combined powdered milk with the sugar, using a single cube. They would simplify the job at the coffee break.—*P. J. Marutiak, Owosso, Mich.*



A SMALL CAR TABLE to fit around a child so that he could color or play games on long trips. Folding legs would support it on the car seat.—*Mrs. Chester Van Liere, Holland, Mich.*



DISPOSABLE SINK CLEANERS of paper toweling treated with detergent or scouring powder. They should be strong enough to scrub with when wet.—*Mrs. R. Van Zoeren, Utica, N.Y.*



A MASON'S TROWEL with built-in level to make checking on the work easier and quicker. The level could be set into the top or side of the handle.—*R. W. Sawyer, Glastonbury, Conn.*

Everyone has his own pet idea of a gadget that he would like to see in general use. The five ideas illustrated above were suggested by POPULAR SCIENCE MONTHLY readers. What

is yours? We will pay \$5 for each one published. Please use Government postcards only. Write name and address clearly. Contributions cannot be acknowledged or returned.



CULTIVATE



MOW WEEDS



SAW
TIMBER,
FIREWOOD



MOW
LAWNS



BLOW
SNOW



MOW
LAWNS, WEEDS,
MULCH
LEAVES

HAUL



FREE

MAIL TODAY



GRAVELLY

More
for your
Money!

GRAVELLY MAKES TOUGH JOBS EASY!

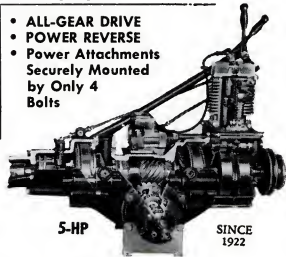
Gravelly does jobs other tractors won't . . . because Gravelly has that extra power you need for the tougher mowing, gardening, field and farm jobs. Does a better job, even on steep slopes!

You get more when you get Gravelly. All-gear drive, power reverse, simple operation. More traction from easy-handled, balanced weight.

NEW FOR 1956

An optional ELECTRIC STARTER . . . push-button power! A new STEERING SULKY for finger-tip handling of your Gravelly . . . a small dozer blade . . . and tractor improvements for MORE value . . . new cooling system, chrome rings, engine improvements for more power . . . see the improved Gravelly!

- ALL-GEAR DRIVE
- POWER REVERSE
- Power Attachments Securely Mounted by Only 4 Bolts



5-HP

SINCE
1922

PLUS . . . 23 JOB-RIGHT TOOLS!

Your choice of 23 tools for a versatile tractor that saves time, work and worry all year long. Tools to do every mowing, gardening, field and farm job.

Send coupon today for "Power vs. Drudgery", the big booklet that shows how Gravelly equipment solves your upkeep and gardening problems . . . faster, easier, better! (EASY PAY PLAN, TOO!)

GRAVELLY TRACTORS, INC.
BOX 284 DUNBAR, W. VA.

Please send me "Power vs. Drudgery" Booklet and dealer's name.

NAME _____

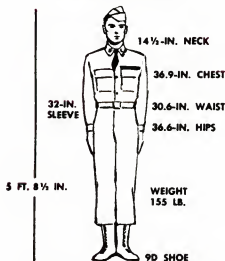
ADDRESS _____

CITY _____ STATE _____

The cancer fighters are winning battles, if not yet the war. First trials of a new blood test showed it to be amazingly accurate at detecting early stages of cancer. A good cancer test would be very valuable, since cancer can usually be cured if recognized soon enough. And some headway is being made against leukemia, the tragic blood cancer that often strikes children. By using cortisone combined with mercaptopurine, doctors at New York's Memorial Center have kept 47 percent of young

leukemia patients alive for a year or more. Untreated, only five percent of the leukemia sufferers could be expected to survive the year.

AVERAGE GI A SIZE 38



AVERAGE MEASUREMENTS
OF U.S. SOLDIERS FROM
ARMY QUARTERMASTER CORPS

six billion volts.) To run an atom smasher of this size, 140,000 kilowatts of electricity will be required. That's the total output of a big city power plant.

Fourteen-inch tires, one inch smaller than the present ones, are in the works for '57. Good-year says that its small tires will be fatter than the 15-inchers, and will carry 20 pounds of air pressure.

Don't argue with radar cops. Their device measures automobile speeds very accurately. When it does err, it usually errs in favor of the speeder, according to a study made for the Buffalo, N.Y., Traffic Department.

The Russians are building what will probably be the world's biggest atom smasher—a 10-billion-volt synchrotron. (The biggest U.S. machine is the University of California's Bevatron—

Hormones save teeth, at least in animals. Dr. Irving Glickman of Tufts University reported that injections of the female sex hormone, estrogen, into animals with pyorrhea reconstructed jawbone tissue, preventing loss of teeth.

Navy plans giant A-sub. Twin atomic engines will power the Navy's biggest submarine. Its speed—over 30 knots—will match the fastest surface ship.

New building materials are in prospect for American homes. Among those expected soon:

- Concrete boards—wood excelsior combined with Portland cement. They unite the qualities of both materials.
- Wood bricks, made from short sawmill leftovers.
- Insulation six inches thick, to shield air-conditioned homes from attic heat.

Adjustable power steering is available on a new British car, the Armstrong-Siddeley Sapphire. You can turn it up for parking and traffic, then cut down on the power assist for highway driving.

Good book. Model T fans will have a grand time with *Tin Lizzie*, by Philip Van Doren Stern (Simon & Schuster, \$3.95). Besides facts, jokes, even songs about the most famous car ever made, it describes the Flivver that PSM restored.



PACKED WITH POWER
...and ready to prove it!



The secret of Pontiac's *blazing go* is in the teamwork of *two* engineering masterpieces . . . the mighty Strato-Streak V-8 . . . and the revolutionary new Strato-Flight Hydra-Matic*!

It's the sort of power and go you dream about. But this time it's real.

Behind the wheel of the flashing '56 Pontiac you command an engine virtually alive with spirit . . . and a terrific urge to be on the move. A cubic displacement of 316.6 inches gives you terrific take-off! A whopping big 8.9 to 1 compression ratio squeezes the last ounce of *go* out of every drop of gas. *That's power . . . blazing 227 horsepower!*

You purr along peacefully, completely unaware of the other half of Pontiac's great power team . . . the fluid-smooth Strato-Flight Hydra-Matic. There's perfect harmony here (it was carefully engineered that way) . . . for this great new automatic transmission takes the tremendous thrust from the engine and utilizes every ounce of it, passing it on, smooth as silk, to the rear wheels. An amazing new controlled fluid coupling combined with the efficiency of gears does the trick!

Test the flashing new '56 Pontiac yourself. But hold on to your hat, you'll be piloting the greatest "go team" on wheels.

*An extra cost option.

PONTIAC says GO

and the price won't stop you!

CRAFTSMEN AT WORK



Homemade Plane. Fred Clifton and sons Gene and Jack put in two years of spare time and \$800 building this 625-pound aerial hot rod in the family garage at La Junta, Colo. The single-place monoplane cruises at 160 m.p.h., can hit 180. An 85-hp.

Continental engine that cost \$325 spins the \$125 variable-pitch propeller. About \$100 worth of steel tubing went into the 17½-foot fuselage. The fabric took \$75, the factory-rebuilt instruments \$50. The standard landing gear was salvaged from a wreck.



Tin-Can Artist. When a teacher in the U.S. sector of Berlin challenged his handicraft class to create toys from scrap, the student at left turned out two unusual ones from empty cans and boxes. Wire, cord and screws hold the parts together. The motorcycle rider appears to be a working model.

For-J-Let. A Henry J chassis, Ford V-8 engine and overdrive transmission and Chevy springs and radiator were among the parts that went into the roadster below, christened a For-J-Let. The top is black orlon on a frame from a 1941 Pontiac convertible. The Reverend Wallace Gardner, Rushville, Ind., estimates that he spent more than 900 hours and about \$1750 building the car.



ARE YOU TOO OLD TO LEARN?

not at all, scientists say

New tests show that: your ability to think increases with age; your powers of deduction are greater; your judgment is better.

In the I. C. S. files are thousands of cases of men and women of every age. Their successes, their promotions, their raises prove that men and women past school age can learn!

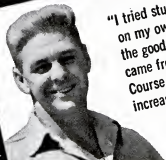
I.C.S. GIVES YOU EXPERT GUIDANCE FREE! Do you have the feeling you're "stuck" in your job? Your trained I.C.S. counselor will appraise your abilities, help you plan for the future.

IT'S NEVER TOO LATE TO GET STARTED! You study with I.C.S. at home, in your spare time. There's no interference with business or social activity. Famous I.C.S. texts make learning easy. Don't delay. Pick your field from the coupon below. And mail it today!



3 FREE BOOKS

36-page, pocket-size guide to advancement, a gold mine of tips on "How to Succeed." Big catalog outlining opportunities in your field of interest. Also sample lesson (Mathematics).



"I tried studying my work on my own, but I never got the good out of it that came from my I. C. S. Course. My salary has been increased 73.3%!"

E.L.B.
Ohio

"I am president of a small corporation. A year ago I enrolled with I. C. S. as the most practical means available to me to learn what I needed."

W.J.A.
Michigan



"It's been so long since I went to school, I've forgotten much. But now that I'm taking an I. C. S. Course, I have confidence in my ability again."

H.A.R.
New Jersey



Actual statements.
Posed by models.

For Real Job Security—Get an I. C. S. Diploma!

I. C. S., Scranton 9, Penna. Member, National Home Study Council

INTERNATIONAL CORRESPONDENCE SCHOOLS

BOX 99641B, SCRANTON 9, PENNA.

(Partial list of 277 courses)

Without cost or obligation, send me "HOW TO SUCCEED" and the opportunity booklet about the field BEFORE which I have marked X (plus sample lesson):

ARCHITECTURE AND BUILDING CONSTRUCTION

- ☐ Air Conditioning—Refrig.
- ☐ Architecture
- ☐ Architectural Interior
- ☐ Building Contractor
- ☐ Building Maintenance
- ☐ Carpenter and Mill Work
- ☐ Estimating
- ☐ Heating
- ☐ Painting Contractor
- ☐ Plumbing
- ☐ Reading Arch. Blueprints

ART

- ☐ Cartooning
- ☐ Commercial Art
- ☐ Fashion Illustrating
- ☐ Magazine Illustrating
- ☐ Show Card and Sign Lettering
- ☐ Sketching and Painting

AUTOMOTIVE

- ☐ Auto Body Rebuilding
- ☐ Auto Elec. Technician
- ☐ Auto-Engine Tune Up
- ☐ Automobile

AVIATION

- ☐ Aeronautical Engineering Jr.
- ☐ Aircraft & Engine Mechanic
- ☐ BUSINESS
- ☐ Advertising
- ☐ Bookkeeping and Accounting
- ☐ Business Administration
- ☐ Business Correspondence
- ☐ Public Accounting
- ☐ Creative Salesmanship
- ☐ Federal Tax
- ☐ Letter-writing Improvement
- ☐ Office Management
- ☐ Stenographic-Secretarial
- ☐ Traffic Management

CHEMISTRY

- ☐ Analytical Chemistry
- ☐ Chemical Engineering
- ☐ Chem. Lab. Technician
- ☐ General Chemistry
- ☐ Natural Gas Prod. & Trans.
- ☐ Petroleum Engineering
- ☐ Plastics
- ☐ Pulp and Paper Making

CIVIL, STRUCTURAL ENGINEERING

- ☐ Civil Engineering
- ☐ Construction Engineering
- ☐ Highway Engineering
- ☐ Reading Struct. Blueprints
- ☐ Sanitary Engineering
- ☐ Structural Engineering
- ☐ Surveying and Mapping
- ☐ DRAFTING
- ☐ Aircraft Drafting
- ☐ Architectural Drafting
- ☐ Electrical Drafting
- ☐ Mechanical Drafting
- ☐ Mine Surveying and Mapping
- ☐ Plumbing Drawing and Estimating
- ☐ Structural Drafting
- ☐ Electrical Engineering
- ☐ Electrical Maintenance
- ☐ Electrician
- ☐ Contracting
- ☐ Lineman

HIGH SCHOOL

- ☐ Commercial
- ☐ Good English
- ☐ High School Subjects
- ☐ Mathematics

LEADERSHIP

- ☐ Foremanship
- ☐ Industrial Supervision
- ☐ Leadership and Organization
- ☐ Personnel-Labor Relations

MECHANICAL

- ☐ STEAM AND DIESEL POWER
- ☐ Gas—Electric Welding
- ☐ Heat Treatment
- ☐ Metallurgy
- ☐ Industrial Engineering
- ☐ Industrial Instrumentation
- ☐ Industrial Supervision
- ☐ Internal Combustion Engines
- ☐ Machine Design-Drafting
- ☐ Machine Shop Inspection
- ☐ Machine Shop Practice
- ☐ Mechanical Engineering
- ☐ Quality Control
- ☐ Reading Shop Blueprints
- ☐ Refrigeration
- ☐ Sheet Metal Worker
- ☐ Tool Design
- ☐ Toolmaking
- ☐ RADIO, TELEVISION
- ☐ Industrial Electronics
- ☐ Practical Radio TV Eng'ng
- ☐ Radio and TV Servicing
- ☐ Radio Operating

TELEVISION Technician

- ☐ RAILROAD
- ☐ Air Brakes
- ☐ Car Inspector
- ☐ Diesel Locomotive
- ☐ Locomotive Engineer
- ☐ Section Foreman
- ☐ STEAM AND DIESEL POWER
- ☐ Combustion Engineering
- ☐ Diesel—Elec.
- ☐ Diesel Eng's
- ☐ Electric Light and Power
- ☐ Stationary Fireman
- ☐ Stationary Steam Engineering
- ☐ TEXTILE
- ☐ Carding and Spinning
- ☐ Cotton, Rayon, Woolen Mfg.
- ☐ Finishing and Dyeing
- ☐ Loom Fix'g
- ☐ Textile Eng'g
- ☐ Textile Eng'g
- ☐ Throwing
- ☐ Winding and Weaving
- ☐ MISCELLANEOUS
- ☐ Domestic Refrigeration
- ☐ Marine Engineering
- ☐ Ocean Navigation
- ☐ Professional Engineering
- ☐ Short Story Writing
- ☐ Telephony

Name _____ Age _____ Home Address _____

City _____ Zone _____ State _____ Working Hours _____ A.M. to P.M. _____

Occupation _____

Canadian residents send coupon to International Correspondence Schools, Canadian, Ltd., Montreal, Canada. . . . Special tuition rates to members of the U. S. Armed Forces.

for those who
want the finest

the fabulous Evinrude

Lark

America's Finest
Outboard Motor



One glance tells you . . . something wonderfully new and exciting has come to outboard boating. *The Lark is here . . .* with its sparkling million-dollar look . . . commanding power encased in spectacular beauty. One glance tells you that it's finer than need be—we planned it that way—and for you the pay-off is bountiful! The Lark's crisply modern styling lends distinction to the smartest run-

about . . . gives a gay lift to *any* boat. Its performance is as you'd expect . . . just a bit out of this world! 30 eager horsepower, trigger-fast take-off, blazing top speed. Your crew is pampered with a ride that's pure luxury—noise-free, vibrationless—the sailing-smooth ride of Whispering Power. Truly a motor for those who seek the finest . . . and the price is the pleasantest surprise of all!



SEE YOUR EVINRUDE DEALER. Look for his name under "Outboard Motors" in the yellow pages of your phone book. He will gladly show you the complete line of nine Evinrude models for 1956. Three brilliant "Thirties," two with electric starting. New electric starting Fastwin. New Sportwin, 10 HP, and Fisherman, 5.5 HP. Revolutionary new Eas-A-Matic starting on five models. *Catalog Free!* Write for big, full-color catalog of the complete Evinrude line. EVINRUDE MOTORS, 4187 No. 27th Street, Milwaukee 16, Wisconsin.



Evinrude

Pioneers in quiet Outboard Motors



A Division of Outboard, Marine & Manufacturing Company
In Canada: Manufactured by Evinrude Motors, Peterborough

AC
engineers
developed the
SPARK PLUG
INSULATOR
with
HI-TENSION
insulation
features



Rib design of AC Buttress-Top Insulator gives AC the longest electrical-leakage path of all major brands regardless of number of ribs . . .

THIS MEANS that you are more completely protected from "flash-over" that can cause power-wasting misfiring. "Flash-over" can occur when insulator tops get coated with dirt or moisture. The AC rib design has an umbrella effect in preventing dirt or moisture accumulation. AC's rib contour also lengthens the path the "flash-over" must take. These factors practically end "flash-over."

plus CONDUCTASEAL, an exclusive AC center-wire-to-insulator seal formed from metal and ceramic materials *fused* in the assembly process. This seal prevents power-robbing "blow-by" yet acts as a splendid conductor for top ignition performance.

plus HOT TIP, another AC exclusive feature! The AC insulator tip is long, and deeply recessed to heat fast, burn away carbon and oil residues that would soon foul ordinary plugs. Put in AC **HOT TIP** Spark Plugs, and enjoy the full performance that was built into your engine.



AC SPARK PLUG  **THE ELECTRONICS DIVISION of GENERAL MOTORS**



"Highest-priced prefab," this two-level house by Scholz Homes sold in Cleveland for \$86,000.

What's new in

Prefab Homes

One in every seven new homes this year will be factory-built. Some are aimed at the Cadillac trade, with \$50,000 price tags.

By John L. Springer

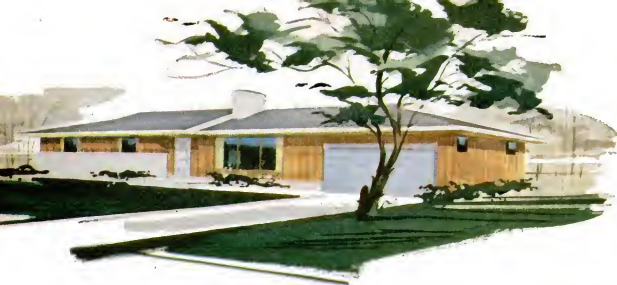
MODERN architects will be enthusiastic about the new homes that prefabricators have brought out for this year's customers. They are long and low, with vast expanses of glass. The roofs are flat or pitched only slightly, and have wide overhangs.

Homes built this way a decade or so ago were often said to look "cheap." Now it's smart to have such a home. If you like this contemporary style, you can often obtain a home more reasonably

now from a prefabricator than from a conventional builder.

This is not surprising when you consider how prefab homes are built. They usually consist of panels made in a factory so that they can be put together quickly elsewhere. This method turns out one-story homes with low roofs more easily than it does older styles.

The manufacturers have taken pains, however, to see to it that their houses still look like houses, rather than barns or factories. And they have found many new ways of making each house look dis-



MODERN HOMES' "MANOR" has low hip roof with wide overhang, dazzling features like bed-

side switches to open and close windows. Built on an average-priced lot, it costs about \$22,000.

tinctive, so that a row of prefabricated homes no longer needs to look monotonous and dreary.

The first prefab homes were usually about the size of a chicken coop. Now such homes are bigger and roomier. This is a logical development, too, because what most prefabbers actually sell is the shell—outside walls, inside partitions, and roofing. The rest of the things that go into a house—masonry, plumbing, heating, wiring, flooring and painting—are often created at the site, and probably cost as much for a prefab as for a similar house built in the usual way. Hence, the savings of factory assembly have to come from the shell; and the bigger the shell is made, the greater the relative saving.

One of the interesting new designs is

really a double house. Introduced by W. C. Best Homes of Effingham, Ill., this "Starlyte" model has two separate sections, connected in the middle by a vestibule. One side is for cooking, eating and recreation; the other for sleeping.

In its high-priced Ridgewood luxury line, National Homes has introduced another feature that will probably attract a lot of attention. It is a kitchen squat in the middle of the house, with halls on three sides, and without any windows or doors leading to the outside. A fan with ducts does the ventilating.

The large manufacturers offer so many models nowadays that you find many different-looking homes when a prefab development is finished, even though all of the homes came off an assembly line.

SCHOOLS TOO—also churches and supermarkets—are now prefabricated. This school, built

by National Homes in Lafayette, Ind., was completed 21 days after the foundation was poured.





Pease Homes' "Shorewood" has clean, modern lines. Cost, with luxury extras: about \$30,000.



This design by Home Planners, Detroit, can be built with panels prefabricated by lumberyards.



Best Homes' \$30,000 "Starlyte" has a wing for eating and recreation, another for sleeping.

U. S. Steel Homes, for example, takes one basic floor plan and offers many variations. One model has a wide window wall, and wide-open planning where the kitchen and dining room open to the living room. Another house with the same square footage has conventional windows, and its kitchen and dining area are closed off. You would think you were in two entirely different houses.

Prefabs used to be synonymous with

low price. Most factory-produced houses now sell for around \$10,000 or \$12,000, but you would not have much trouble finding one price-tagged at \$30,000. A Cleveland man who saw a Techbuilt house made to sell for \$20,000, souped it up with extras, and wound up paying \$60,000 for his prefabricated home.

If you are looking for new ways to cut building costs, however, you can learn a bookful of valuable lessons from

Prefabbers use modern methods to get their houses up fast



STEEL JOIST FRAMING is used by Modern Homes. Joists hang on top of foundation, four feet apart, and span entire width of the house, eliminating lally columns in the basement.



PLYWOOD FLOOR PANELS are often prefabricated at the factory on a framework of two-by-fours and are bolted to steel joists at the site. Users claim that floors built this way are stronger.



ROOF TRUSSES supported entirely on outside walls give prefabbers wide-open interiors to work in. They lay the finished floor and erect ceilings before putting up interior partitions.

prefabbers. They're the experts. Here are some of their cost-cutting ideas that can be applied to conventional houses:

- **Combined sheathing-siding.** The new exterior-grade plywood with vertical grooves, known as "Texture 1-11," serves a double purpose and sharply cuts labor costs. It takes the place of sheathing, building paper and siding.

- **Prefab flue.** By placing the furnace in the center of the house, usually near the kitchen and bathroom, many prefabbers reduce the length of duct runs and hot-water supply lines. This saves material. Flues, hung from the ceiling, go up in two hours, saving about a day's wages.

- **Roof trusses.** First-floor ceiling and roofs are framed together at the factory to span the entire depth of a house. Outside walls carry all the weight of the ceiling and roof. There's no need for load-bearing room partitions. Trusses save lumber, speed erection time and make it possible for you to have wide open spaces inside the house.

- **Inexpensive room dividers.** Instead of erecting a costly, stud-wall partition between the kitchen and the dining area, many prefabbers install a bamboo curtain which runs on a track in the ceiling. This divider can be opened full-width, making both rooms look larger.

- **Double-duty wiring.** You will often find electrical outlets serving different rooms on opposite sides of a wall partition. Attaching two outlets opposite each other to one stud saves wire and labor.

Many obstacles that stalled prefab manufacturing in the past have been knocked out now. In most sections of the country, the building codes now permit you to erect a factory-made home. And it is usually simple now to finance such a home with Government-backed Federal Housing Administration or Veterans Administration mortgages.

Prefabbers admit, however, that they still find it difficult to sell their houses in neighborhoods where "prefabrication" remains a naughty word. Many people remember when nearly all prefabs were square cracker boxes that looked as if

[Continued on page 268]



Baby Atom Smasher Will Go Down a Hole to Prospect for Oil

THESE engineers are comparing the world's smallest atom smasher with a standard laboratory model. The baby accelerator will be used to identify and locate oil at great depths

by producing a stream of neutrons which penetrate the earth around a well bore. The reactions that are set up by the rays will help oil men to "log" or evaluate wells.



Waste Heat from Reactors Now Air-Conditions Atomic Plant

WATER that is used to cool reactors now also warms workers at the Hanford atomic plant. Pumped to a heat exchanger, it gives up its heat to an ethylene glycol solution

which transmits it to the plant buildings. GE engineers who devised the system decided on antifreeze as the transfer agent to prevent its freezing in outdoor coils (above).

Models display radical nuclear-reactor styles.



"Fast breeder" A-power station will have advanced design and 100,000-kilowatt capacity.

Inside the New A-Power Plants

Liquid-fuel reactor pioneers use of thorium.



RECENTLY exhibited models show two of the most promising of a crop of advanced new designs for atomic power plants.

Due for completion in 1959 at Monroe, Mich., the \$54,000,000 generating station above will house a "fast breeder" reactor that conserves atomic fuel by creating more than it consumes. A mighty midget using high-speed neutrons, it has a core or "firebox" only three feet in diameter and three feet high, but will whirl a 100,000-kilowatt generator to feed current into Detroit Edison lines.

Centered in the domed reactor building, a circular chamber encloses control rods, which extend downward to the reactor in its sealed underground capsule. Uranium-alloy plates enriched in

U-235 serve as fuel; more fuel is "bred" in a surrounding uranium blanket. Liquid metal carries heat from the reactor to a heat exchanger and thence to a boiler, making steam for the turbogenerator in the oblong powerhouse. Atomic Power Development Associates, Inc., a group of 33 electric, manufacturing and engineering firms, developed the plans.

In the other new design, at the bottom of the opposite page, liquid fuel courses through the pear-shaped zirconium-metal core of a pilot-size Oak Ridge National Laboratory power reactor. Shown by a $\frac{1}{8}$ -actual-size cutaway model, the six-foot globe will yield 5,000 to 10,000 kilowatts of heat energy, of which a small fraction will drive a 300-kilowatt generator in trials. Fuel (symbolized by red) is uranyl-sulfate salt enriched to 90 percent U-235 and dissolved in heavy water. The hollow space surrounding the core (green) will hold thorium oxide suspended in heavy water, and breeding will turn the thorium into fissionable U-233 fuel. Water-cooling tubes form spiral ribs in the surface of the outer stainless-steel globe.

Attractively simple in design, a liquid-fuel reactor has been called "a pot, a pipe and a pump." Spent fuel is reclaimed continuously, instead of in batches. And this type may best exploit abundant thorium for fuel.

These illustrated designs exemplify two parallel plans for U. S. atomic-power development. The Michigan project is part of a Power Demonstration Program undertaken by private industry, with Government encouragement and aid in research, since January 1955. The Oak Ridge reactor is one of five promising types being built meanwhile by the Atomic Energy Commission in the Government's own Civilian Reactor Program, begun in 1954 to advance power-reactor technology. First to produce a full-scale A-power plant will be the Government program, with completion in 1957 of another AEC project, a pressurized-water reactor operating a 60,000-kilowatt atomic powerhouse at Shippingport, Pa. —Alden P. Armagnac.

New British Scooters Designed for the Gals



Aluminum motor powers scooter above.



This carlike model has sheet-metal body.

ESPECIALLY for the ladies, the featherweight British scooter in the top picture uses aluminum for all the motor's castings, with hard chrome-plating for the cylinder's wearing surface. A pre-selector mechanism eases shifting gears, and one handle-bar twist-grip provides control. The same Birmingham maker, B.S.A. Motor Cycles, Ltd., offers another model (lower view) with 50-m.p.h. top speed and carlike features: electric starter, four-cycle engine with coil ignition, four-speed gearbox, twin mufflers and shaft drive. The sheet-metal body flares out in front, shielding the rider from road splatter. The gas tank and the battery are concealed under the hinged dual seat.



You're not seeing the ground but a photo mural decorating an oil company's executive plane.

Plush Planes Tailored

In the plane below, V.I.P.'s can watch TV from a curved divan that turns into a berth.



Flying offices now let company bosses work on the wing amid the comforts of a private club.

FLAGS OF 80 COUNTRIES adorn the nose section of the *Chicago Tribune's* re-tailored, widely traveled Convair 340. Galleys on planes like this, fitted with stoves and refrigerators, can make a snack or a banquet.



FAR FROM COMBAT missions, a former B-26 done over for a pipeline company is well equipped for comfortable conferences. Those ceiling grilles hide radio speakers. Most executive planes also have air-to-ground radios. The planes may cost up to \$750,000; interior styling comes to another \$100,000 or more, depending on structural changes required.

for Business Brass

A KIND of de luxe tailor shop, where company-owned airliners come for fittings and alterations and leave dressed in the height of luxury and fashion, lies alongside Los Angeles' International Airport.

Of the 21,500 business planes in the U.S. today—15 times as many as the scheduled airlines have—a select and svelte group has been expensively decked out by this shop, the AiResearch Aviation Service Co.

Here you see some fancy interiors that have been turned out to make life aloft more pleasant and efficient for top corporations' top brass. What you don't see are the bigger engines, nylon fuel tanks, pressurization and air-conditioning gear, radar sets, automatic pilots, and powered trim tabs often included.—Wesley S. Griswold.



WORKING QUARTERS for a high-pressure executive aloft provide a typewriter fore and a tape recorder aft, with an easy chair that swings around smoothly from one machine to the other, as desired.



Six Jets on 1937 Chevy Give It High Speed, Short Range

CALLED "The Thing" by its inventor, John Shelburne, a Hannibal, Mo., auto serviceman, this experimental jet car goes so fast that its speedometer can't clock it. On top are six jet

engines: twin rear take-off jets burning methyl alcohol, a big gasoline main jet, upper kerosene twins, and another alky job behind them. The odd vehicle uses a lot of fuel.



Tiniest Speaker: Half Inch Thick

BUILT for transistor pocket radios, the loudspeaker at top above is said by RCA to be the smallest ever built for commercial receivers. Its magnetic structure is housed within the shell around its vibrating cone so that it is only half an inch thick—half the size of the older midget (in foreground) which has the magnet in its housing.



Air Pressure Lights Floodlamp

AN EXPLOSION-PROOF safety floodlight for use in mines and refineries gets its electricity from a built-in turbo-generator driven by compressed air. The 150-watt, 12-volt lamp draws 23 cubic feet of air per minute at pressures from 60 to 100 pounds, and is cooled by exhaust air. It will cut off automatically if the lens is shattered.

A shining tower, this 138-foot water tank of stainless steel will never have to be painted. Its 250,000 gallons supplement the city supply to give fire protection to the new General Motors Technical Center north of Detroit. The coppery reflection from the excavation below will change to blue when the 22-acre lake is filled.

Dedicated to all faiths, the Shrine of the Ages Chapel below will begin to rise this summer on the age-old Arizona Grand Canyon rim overlooking the site where Easter sunrise services are now held. Protestant, Catholic and Jewish altars, operated on hydraulic lifts, will take their places in the chancel in turn as needed.





Copter Drops Painter to Daub Frosty "Pumpkin"

WHEN a huge radome at Thule Air Base, Greenland, needed a paint job, the problem was how to get a rope ladder up to its chilly crown. The 55th Air Rescue Squadron solved it with a helicopter. A serviceman descended from the hovering craft and attached a ladder to the top of the fabric-covered building that houses the radar.



Pilot Wears His Movie Camera

As PILOT of a "chase plane" during test flights for experimental McDonnell jets, Zeke Huelsbeck likes to make movies of the other plane's performance exactly as he sees it. Since he is too busy to use a hand-held camera, he bolted a gun-type job to his crash helmet at eye level. The camera is operated by a remote hand control.



New Cable Car Gives Striking View of Caracas

THE first car of Caracas' new \$15,000,000 cable-car system nears a landing on 7,000-foot Mount Avila. Second longest in the world, the system connects

with two adjoining peaks and the Caribbean. The spectacular Venezuelan project includes a circular, 14-story, mountain-top hotel and an ice-skating arena.

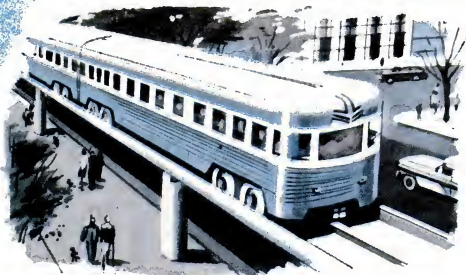
What's Coming Next?

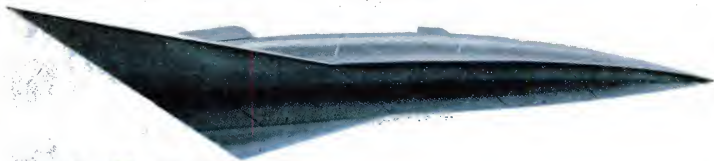
Already on the drawing boards are ideas that may remake our world of tomorrow. Here is a glimpse into the future, at some of the most striking of the innovations that a recent survey has found forward-looking scientists, architects and engineers cooking up for us in the country's laboratories and workshops.

PSM DRAWINGS BY JO KOTULA

DRIVERLESS TRAIN

RAPID-TRANSIT PLAN of Henry K. Norton, New York, Susquehanna & Western R. R. president, proposes 60-m.p.h. pneumatic-tired trains without drivers, on roadlike elevated track with a central guide rail. When station agent throws lever closing doors and activating track, trainload of passengers proceeds automatically to next stop—an innovation shown feasible in a recent New Haven R. R. experiment.





MAN-CARRYING SATELLITE

NEXT SPACE-EXPLORING STEP after tiny unmanned earth satellites will be this more useful manned "satelloid," foresees Convair guided-missile expert Krafft A. Ehrlicke. His hybrid plane-spaceship would maintain itself for days in orbit of modest 80-mile altitude, as a 17,400-m.p.h. satellite, by intermittent rocket bursts; then glide back to earth. Tail and lower half of the forward section, rocket boosters for the winged part, are shed as shown during climb to orbit.



DREAM HOUSE

THREE-UNIT PLYWOOD STRUCTURE for vacationists, designed by San Francisco architects John Campbell and Worley Wong, is called "leisure house of tomorrow." Outdoor pavilion with sun shelf (foreground) offers sunbathing, resting in shade, swimming in pool across walk. Partly sunken, windowless "cave" with steplike seats (right background) invites gathering in evening around fireplace. Living area with kitchen and bath (left background) serves for eating, sleeping.

FLYING SUBMARINE

AT HOME IN WATER OR AIR, this combination craft would fly under power of a jet engine, and alight on water skis. With air intakes and exhaust sealed, it would then submerge and operate as a submarine, using a marine power plant and a retractable screw propeller. Armament could include two torpedoes. According to patentee Don B. Doolittle of All-American Engineering Co., Wilmington, Del., release of details has just been permitted by the Defense Department, which kept the patent of the flying sub secret for several years.





“Rip It Up” Is Motto at Heavy-Equipment School

FUTURE road builders learn how to handle big tractors, scrapers, graders and shovels at a new school near Charlotte, N.C. Their laboratory is a tract of virgin soil which they dig into and move around in order to obtain a diploma for the four-week course.

Backed by equipment dealers and manufacturers, the National School of Heavy Equipment Operations turns out trained operators in 218 hours of work—two-thirds in the field, the rest classroom study.



Quick-Change Unit Gives Car Control To Driving Teacher

A detachable duplicate-pedal mechanism now lets you put on your car, for driving lessons, the same dual controls that professional instructors have. Made by Portable Dual Controls, Inc., Detroit, for automatic or standard transmissions, the new safety device can be installed or removed in less than a minute.



SCINTILLATION COUNTER responds to faint radioactivity of common rocks, detects variations from average that may point to valuable minerals. This airplane-type model may also be used in car or afield. Detecting head, foreground, actuates meter on control unit in farther observer's hands.

DIAMONDS occur in kimberlite rock like specimen bearing this rough gem. Volcanic "pipes" of kimberlite are "dead" spots radioactively, and so can be spotted from air by low counter readings. Method promises discovery of new African diamond fields, and might find first of importance in U. S.

'Black Box' Points Way to Oil and Gold

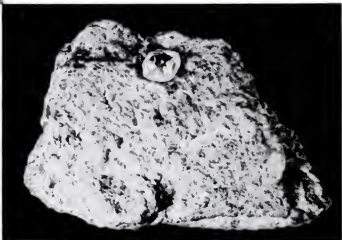
Sensitive meters read clues in rocks, to guide prospectors to the earth's mineral treasures.

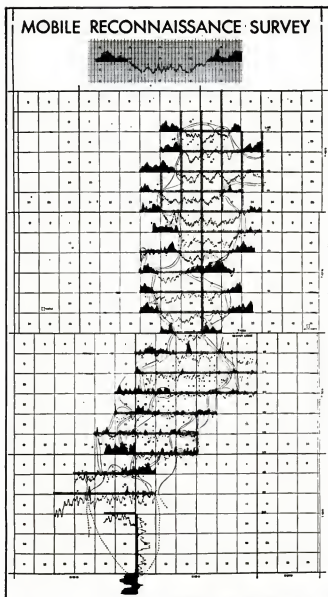
By Alden P. Armagnac

RADIOACTIVITY now guides gem hunters to diamonds, and modern forty-niners to gold. A new science called tracer prospecting offers prospectors an exciting new way to locate these and other valuable minerals—oil, iron, silver, copper and lead, among them.

Tracer prospecting takes advantage of clues in the form of minute amounts of radioactive substances in rock. Much as man-made radioactive "tracers" now tag materials in laboratory and factory, these natural radioactive tracers serve as indicators of other minerals in the earth, it has lately been discovered.

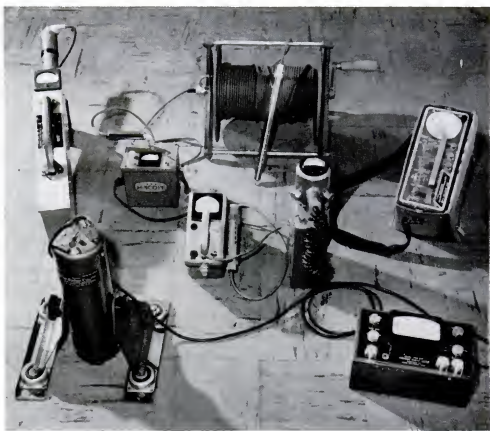
Number One tool of a tracer prospector is a high-sensitivity radiation detector—a scintillation counter or a multi-tube Geiger counter. In sensitivity, either instrument far excels the average uranium hunter's simple Geiger. Like it, the tracer prospector's counter will find uranium. But more than that, it will find other





GROUND SURVEY follows grid lines taken from actual map of area. Truck with counter makes tape recording of radioactivity along each line (sample at top). Resulting charts (highs in black) are added to map. Pattern like this indicates oil or gas in buried river bed.

TRACER PROSPECTORS use these tools: airborne scintillation counter (front, left and right); standard scintillation counter (center, right) beside ordinary Geiger counter (center, left); Geiger counter with king-size 26-inch tube (rear, left); drill-hole radioactivity probe with 1,000-foot cable on reel (rear, center); and 24-tube Geiger counter (rear, right).



minerals that a less sensitive instrument cannot locate at all, by a new "tracer" technique that is based on these simple principles:

- All rocks are slightly radioactive, because they contain, on the average, a few thousandths of one percent of uranium. Different kinds of rocks, however, vary from this average. Granite, which contains quartz, shows a little more radioactivity than the general run; basalt, free of quartz, a little less.
- Not only is a scintillation counter sensitive enough to register the trace of radioactivity in common rock, but it registers, also, any departure from the average amount. It is these variations, *either* upward or downward, that interest tracer prospectors.

Gem explorers seeking diamonds in South Africa have lately been equipping themselves with airborne scintillation counters. By aerial search with these instruments, they expect to locate hitherto undiscovered "kimberlite pipes," the funnel-shaped bodies of bluish rock, ranging up to 2,300 feet in diameter, in which diamonds are found. Volcanic in origin, kimberlite rock belongs to the basalt family and so has subnormal ra-



AIRBORNE SCINTILLATION COUNTER in helicopter's plastic nose detects radioactive "anomalies," or variations from normal, on which

tracer prospecting depends. Equipment of this Bell craft, specially designed for mineral exploration, also includes a portable core drill.

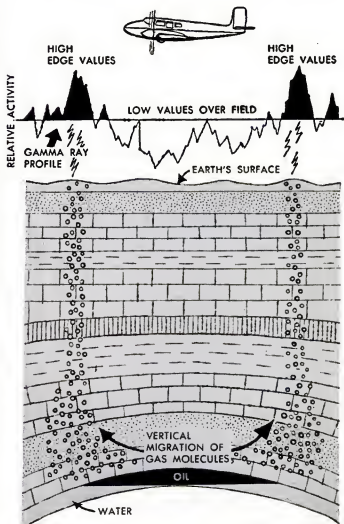
radioactivity. Wherever the aerial prospectors' instruments show a radioactivity "blackout," therefore, should be a likely place to look for the diamond-bearing rock formations.

Kimberlite pipes like Africa's are known to exist in the United States. A few modest-sized diamonds have come from one in Arkansas, where a small-scale mine has been worked from time to time, but domestic diamonds to date have been of more scientific interest than commercial significance. Now plans are under consideration to try out the new diamond-hunting method here, and its successful application could possibly make the U. S. one of the world's important diamond-mining nations.

Finding gold by tracer prospecting has been proven feasible, in a backhand way. Quite recently, ore from African gold mines has become an important source of by-product uranium—of which a small but valuable quantity is associated with the gold in the rich Transvaal and Orange Free State deposits. This presence of uranium in gold ore, geologists say, is by no means unique to these localities.

So prospectors for gold in other re-

[Continued on page 256]



SIGN OF OIL is radioactive "low" ringed by "high" (top of diagram). One suggested explanation: Impervious cap rock, overlying oil, blocks and diverts radioactive-gas molecules rising from depths to surface, as in diagram.

New in Aviation



Visibility is good in this new Skimmer Amphibian. With the pusher prop out of the way and the cockpit forward of the wing, the pilot

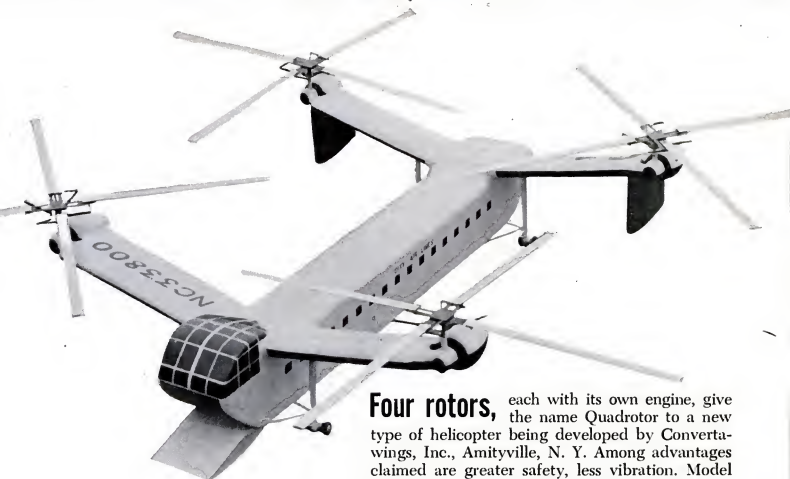
will have an unobstructed view as he sets his craft down on land or water. The three-place, family-type airplane is made by the Colonial Aircraft Corp., Sanford, Maine.



Litter patients fit snugly inside the large cabin of the Army's proposed new Bell XH-40 utility helicopter, shown in a mock-up view above. Rotor blades of the six-place craft will be powered by a turbine that will enable it to climb as fast as World War II fighter planes.



Pod starter: The bomb-like unit shown here slung under the belly of a McDonnell Demon Navy fighter contains a small gas turbine that compresses air to start the big jet engine. The five-foot-long, 450-pound pod can be used as a mobile ground-starting unit.



Four rotors, each with its own engine, give the name Quadrotor to a new type of helicopter being developed by Convertawings, Inc., Amityville, N. Y. Among advantages claimed are greater safety, less vibration. Model shown is for a 76-passenger transport version.



Plastic bags are being tried out as weather covers for the antenna arrays at instrument-landing run-

ways. If they prove successful, says the Civil Aeronautics Administration, they will replace the present red-and-white shacks.

Copter spots sub, lands on same. Few aircraft of any kind have landed aboard a submarine. Among them is this Marine HRS-1 helicopter, shown as it settles down on the deck of the USS *Sea Lion* during recent training maneuvers off the coast of North Carolina.





Lensless Goggles Keep Out Wind

TESTED by the Navy in 70-m.p.h. icy blasts, these goggles show that an air cushion is more effective than lenses. Soft rubber seals the edge against the face, forming a stagnant layer that keeps out the wind. The goggles were designed by Dr. G. S. Macvaugh of Chevy Chase, Md., and his son Gilbert.



K Square Is 5-in-1 Drafting Tool

CALLED a K square by its inventor, a New York high-school senior, this drafting tool replaces a T square, 30-60-90-degree triangle, 45-90-degree triangle, protractor and ruler. Young Lawrence Kalmis (above) adjusts a knob to control the angle of its leg and horizontal movement in a grooved slide.



NYU Builds Reactor in a Pickle Barrel

Two tons of uranium rods and two grams of radium-beryllium in a pickle barrel give New York University engineering students a sub-critical reactor for nuclear experiments. It is safe, realistic, but won't sustain a full chain reaction.



Plastic Roof Proposed to Keep Dodgers Dry on New Field

RAIN checks may become obsolete at the new stadium proposed for the champion Brooklyn Dodgers. Graduate architectural students at Princeton designed this scale model

with a translucent dome to keep field and fans dry, and with no posts to block vision. Half underground, the bowl would be high enough to clear home runs and most fouls.



Light-Delivery Jeep with Two-Wheel Drive Has Sliding Doors

NEWEST of the Willys Jeep line is this two-wheel-drive Dispatcher. A low-cost (\$1,284 up) light-delivery vehicle, it will be available in three models: a steel and fiber-glass-reinforced plastic hardtop with sliding doors on

recessed outside runners (above), a model with or without canvas top, and a soft-top convertible. Each is being made with left or right drive, the latter for foreign sales and rural mail delivery from the driver's side.



Before launching, boaters stock up at Tar Heel Marina.



On the other side of the shop is a "boat-display deck."



Tar Heel's new-idea "breezeway float"

Wanted: Marinas

Parking and servicing America's growing fleet of outboards is a booming business on lakes, rivers and salt-water shorefronts.

By E. D. Fales Jr.

WITH more than 4,000,000 outboard boats now in use—and more coming—there's a tremen-

dous, rising need not only for boat ramps and repair shops but for boat parking space.

As just one sample, the waiting list for boat moorings in the city "marina"



INSTEAD OF CHICKEN FEED this 50-foot mono-rail now whisks boats around in Del Wilson's shop. New, he says, it would have cost him \$1,000. He got it for \$70 at a chicken farm.

124 POPULAR SCIENCE



WHEN WATER LEVEL DROPS and breezeway float must be eased out into deeper water, it is "winched" out on cables that run to deep anchors. When lake rises, float is cranked back.



has storm shelter in center, shops on ends. Gas dock could be cut adrift if fire ever started.

for 4,000,000 Boats

at Mamaroneck, N. Y., is 400 boats long.

You may never have heard of a marina (most people haven't), but the boat industry says that no fewer than 10,000 are in operation today on U. S. lakes, rivers, bays. And 450 more are now being built. But—says the National Association of Engine and Boat Manufacturers—boat-

servicing facilities are already so crowded that the country could use another 10,000 marinas immediately.

What is a marina? A few seasons back the name meant a modern small-boat harbor, with complete (and sometimes swanky) docks and service. Now practically every boatyard that has at



EVERYTHING FROM SKIFFS to 67-foot diesel yachts tie up to marina piers. This is a pier that Bill Walker built (with Mrs. Walker's help) at Kilmarnock, Va. Light crane on pier is used for

hoisting outboard motors. Walker made it for a few bucks by using steel pipe cut from a gas station sign pole for the mast. Pier cost \$2,000; oil companies sometimes pay half.



"BOATELS" ARE THE NEWEST THING in marinas. Del Wilson built five apartments right into his

marina at Rehoboth, Del. Man at center pulls a boat on four-foot dolly that Wilson designed.



HUSKY "HIGH-BANK" RAMP was built by Bill Walker when he found that his beach was too steep for trailers. He laid oak planks between 3"-by-4" steel angles, each 30 feet long.



HUGE SYSTEM OF FLOATING DOCKS, seen behind passing outboards, protects some boats on Kerr Lake. Many owners pay extra for these covered slips which protect their boats from weather.

least a gas pump is calling itself a marina. Some marinas aren't even on water. One in the desert at Tucson, Ariz., sells and services boats for owners who have to "trail" long distances to water.

A big marina is quite an impressive operation. It must have (1) ramps or cranes or a marine railway to get boats into and out of the water, (2) several piers for boat parking, (3) a good repair shop, (4) a large stock of motors, boats, tools, paints, rope, lights and so on.

Perhaps the world's largest is being built at Newport, Calif. It will park 3,000 boats—and 4,000 cars. At Fort Lauderdale, Fla., another big marina, with 500 boat slots, has 28 shops filled with the innumerable items that boatmen buy.

Some marinas are publicly operated by city park departments, but most are privately owned. A man can turn a good profit—or lose his shirt—depending on how good a salesman he is, and how handy with tools.

At Washington, N. C., Dennis Smith-

wick needed a 1½-ton crane. A new one would have cost \$1,000 or more.

"But I found steel from an old highway bridge and welded two reinforced channel girders into a 24-foot boom," he told me. "Another girder became my mainmast. Total cost of all the steel parts for my crane: \$75."

At Copiague, L. I., two men bought a boatyard and at once ran into a problem: customers beefed because they couldn't get their boats out on short notice. (Some boats, naturally, are winter-stored back in the yard, behind many others.)

"We needed a big walking crane," said Stewart Strong. "That's a big expense. So we went to an auction, bought an old power-company truck for \$250. It was too old for road use, but fine for our yard. And there was \$1,000 worth of gear on it: a winch, a big electric motor and a long crane, once used for lifting power poles. Now we 'walk' boats out of any spot in the yard in minutes."

After bulldozing a marina out of a

jungle, at Kilmarnock, Va., Bill Walker needed \$1,000 for dredging (which costs around \$1 a yard).

"To save money, I tried asking boat owners if they'd work their boats for me for an hour for \$8 or \$10," he said. "I'd anchor them in the shallow water I wanted to deepen, with the bows toward shore. Then I'd have them start the props and fishtail their boats back and forth.

"We found that, by fishtailing, a 30-foot cruiser with a large propeller could fan our sandy mud out into deep water. We knocked two or three feet of mud away from our dock. Our total dredging cost about \$45."

At Rehoboth, Del., "Del" Wilson wanted an overhead monorail crane. You can buy a new one for \$1,500.

"We looked around until we found one in an abandoned chicken barn," he said.

Del also found that it took four men to move a 315-lb. cruiser around his shop. So he built a midget dolly only four feet long, cut an axle from pipe, and added two wheels taken from an old baggage porter's truck. Now one man can pull a big boat around with one finger. Further, he can load a boat on the dolly single-handed—by propping up the bow with an ordinary garage hydraulic jack.

Even an old road-scraper came in handy for Dennis Smithwick at Washington, N. C. He removed the 40-to-1 hand winch formerly used by its crew for raising the blade. Now that winch is installed over one of his boat-parking slips. When an owner comes in from a trip, he pushes a lever. A $\frac{1}{4}$ -hp. electric motor turns the winch and lifts his boat three feet out of water. There it stays until the owner takes another trip. Result: the owner has found that instead of having to paint his boat every year, now once every three years is enough.

So many owners liked the road-scraper hoist that Smithwick bought six more from scrap yards. Now he gets an extra \$2 a month from each slip. The above-

[Continued on page 261]

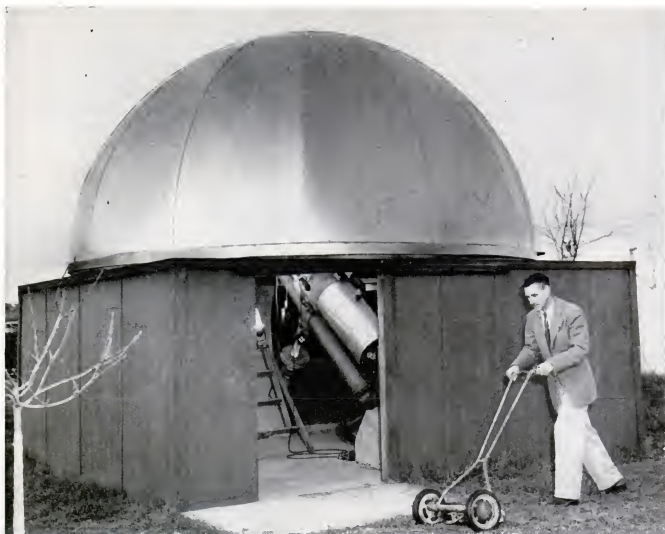


THREE OLD BRIDGE GIRDERS went into the making of this husky crane at Dennis Smithwick's marina in Washington, N. C. He paid about \$65 for them, saved several hundred dollars.



BOATS ARE "PARKED" a foot or two above water in Smithwick's marina. This makes annual painting and varnishing unnecessary, he says. Boats that might warp should be cradled.

.....
Coming next month: A 24-page Spring Boat Fair



Amateur Astronomer Builds His Own Back-Yard Palomar

IMPRESSIVE as his private observatory looks, Martin Vann is still more proud of the 16-inch telescope glimpsed above through the door as he mows the lawn behind his Los Altos, Calif., home. He built both the observatory and the telescope himself.

Vann, who works for a plumbing firm, values his star-gazing setup at \$20,000. He first assembled the high-power telescope for a closer look at the stars; then built the miniature Palomar to house his equipment, using tempered hardboard for the dome.

They Say Now ...

THOMAS E. MURRAY, COMMISSIONER, ATOMIC ENERGY COMMISSION: *"There is a limit to the number of large thermonuclear explosions that the human race can withstand. I propose that we . . . detonate a large thermonuclear weapon (at Eniwetok) before an audience representative of all the peoples of the world. . . . What they would see would leave no doubt in their minds with regard to the meaning of disaster."*

LEWIS L. STRAUSS, CHAIRMAN, ATOMIC ENERGY COMMISSION: *"If there is to be another war (it) may be survived by the country with the greatest stockpile of nuclear*

weapons. . . . But such a war will almost certainly be lost by the country with the fewest resources in trained manpower."

FRANCIS J. GRIFFIN, EDITOR, CHEMISTRY & INDUSTRY, LONDON: *"When the problem of making science teaching attractive financially to men of imagination and ambition has been overcome, the need will still remain for making the best use of those the profession already has. The science teacher is the kingpin of industrial prosperity."*

PROF. FARRINGTON DANIELS, UNIVERSITY OF WISCONSIN: *"By a judicious combination of fossil fuels (coal, oil, gas), atomic energy and solar energy, the whole world can have within this century all the mechanical power and material comforts that it wants."*



GM Firebird II was shown last month, after secret highway tests, as "a progress report" on experiments toward gas-turbine passenger cars. Hooked to its kerosene-burning 200-hp. engine is a

heat exchanger that uses the exhaust to warm incoming air, improving combustion and saving fuel. The car, seating four, is 19 ft. 7 in. long, 4 ft. 4 in. high at the tail. The body is titanium.

3 Cars You Can't Buy

Packard Projector

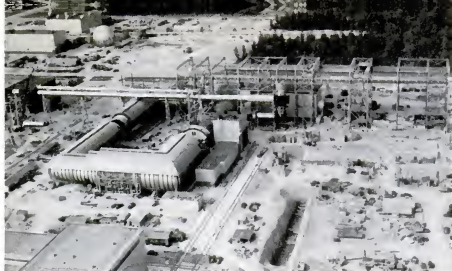
was dreamed up for drivers who prefer to get into and out of a car without bumping their heads. Roof panels retract when the doors open, and seats swivel outward. Headlights are recessed behind push-button lids. In the rear are four exhaust ports, to cut back pressure.



Mercury Turnpike Cruiser also offers no-stoop entry: Transparent panels flap up when you open the doors. Skinny roof posts and compound-curved glass

"permit full enjoyment of the wide new vistas opened to turnpike travelers." The car's own turnpike travel, between auto shows, will be in a glass-sided trailer.





NICKNAMED "TORNADO TOWN," this is the heart of the 250-million-dollar Arnold Engineering Development Center. The Propulsion Wind Tunnel is at left center. At left rear is the Gas Dynamics Facility, where models will be tested at 10 times the speed of sound.

Biggest electric fans whip up

Air for Tomorrow's Airplanes

By Henry B. Comstock

YOUR future and mine may depend on a 250-million-dollar atmosphere factory just being put into production in the middle of 44,000 acres of barrenlands near Tullahoma, Tenn.

This weird assembly of vacuum spheres,

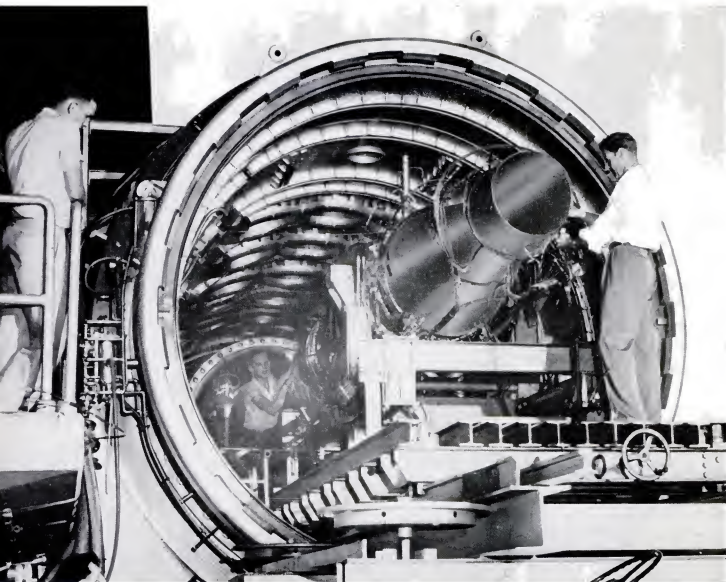
high-pressure bottles and steel tubes—some of them as big around as a four-track railroad tunnel—is the Arnold Engineering Development Center.

AEDC—as this pipe-dream-come-true is known to its owners, the U. S. Air



MAIN CONTROL STATION for the Engine Test Facility sets up routes for air being fed to

wind tunnels. Velocity, density, temperature and humidity are all made to order here.



FULL-SCALE JET ENGINE is wheeled into a cell for testing. Recently a turbojet threw its entire

compressor rotor harmlessly against the walls. Result: the life of one test pilot was saved.

Force—is the world's most powerful and versatile wind-tunnel station. Soon it will be whipping up air in more ways than they serve potatoes in France.

Here's one typical AEDC testing menu:

- Air traveling at 7,600 miles per hour, or 10 times the speed of sound.
- Air heated to 1,500° Fahrenheit—hot enough to braise a steak in less than a second.
- Air compressed to a fourth the density of water.

If that sounds like a rugged diet, it's meant to be. Because the technicians at AEDC are out to blend air velocities, air temperatures and air densities into every kind of torturing atmosphere that may be poured down the throats of tomorrow's supersonic engines, split by the airfoil sections of tomorrow's fighter

planes, or shock-waved from the heads of tomorrow's hypersonic missiles.

Theory into weapons. AEDC is named for the late General Henry H. Arnold, chief of the U. S. Army Air Forces in World War II. What he proposed, in 1944, was not just another research laboratory, but a high-speed processing plant that could take the best products of research and turn them into refined and proven aerial weapons in weeks and months, instead of months and years.

"For postwar air supremacy," said "Hap" Arnold, "we must buy *time* at any cost. The place to buy that time is in the development stage."

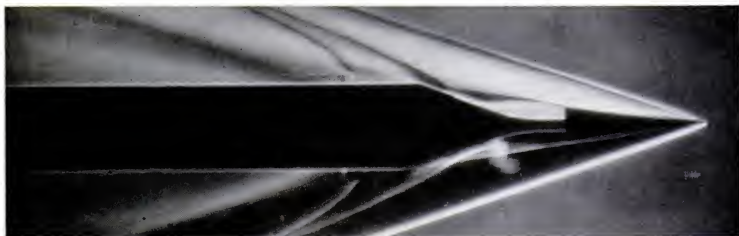
At AEDC they're already beginning to do the job, fast and thoroughly.

Let's say that you have just built a



ADJUSTABLE JACKS shape flat steel plates to form a nozzle contour which, combined with

the quantity of air being fed through it, sets up the desired wind velocity in the test cell.



DIFFERENCES IN AIR TEMPERATURE make it possible to see the shock waves at the head of a missile under test. Walls lining the cell are

perforated to prevent the waves from rebounding against the rocket, creating an air drag that would not exist in actual free flight.

pilot model of a brand-new jet engine. You have convinced the Air Force that you have a potentially hot item—powerful enough, perhaps, to send an attack plane streaking on its mission at twice the speed of sound.

A date with AEDC. You won't be able to trot right down to Tullahoma and give your product an invigorating whiff of 1,500-mile-per-hour air. But as soon as AEDC's present backlog of turbojets, turboprops and ramjets has been fried and frozen, glutted and starved, drowned in humidity and parched, you'll get a

date to set up your engine on a test cart at the Center. There, in a walled-off shop, away from the prying eyes of your competitors, skilled technicians will fasten fancy respiratory gimmicks on your precious chunk of steel.

When it comes "tunnel time," the cart will trundle your engine into a steel cell 12 feet in diameter and from 32 to 90 feet long. A seal will be set up between the intake section and the tailpipe to record the power plant's "bite," or thrust.

Then, while the engine bursts into its full-throated roar, air dispatchers in an

elevated blockhouse will begin pouring on the atmosphere. A touch of a single switch may flip as many as 400 six-contact relays. Lights will dance in an orderly pattern on an overhead panel that looks like the track-layout board at Grand Central Station. The route is clear for the howling tornado set up by a bank of compressors powered by electric motors totaling 20,000 horsepower. Skillfully balancing their output, a 40,000-horsepower battery of evacuators (compressors in reverse) will draw away the gases that streak from the engine's tail-pipe.

Air—fast, cold and thin. Suppose your engine passes every level-flight test with flying colors. It gobbles up the tunnel's highest air velocity—bellows its defiance when the temperature drops to minus 120° Fahrenheit—gets a good bite on the lean stuff you'd find 15 miles above the earth.

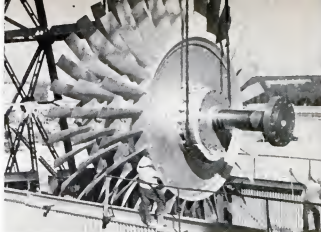
That still doesn't show how it would behave if you put it into a dizzy power climb or a screaming dive. If you could only tilt the engine—but you can't. There isn't enough room in the cell.

AEDC is way ahead of you. A flip of a switch and the nozzle that jets air into the cell slowly changes its line of attack. In effect, the engine is tilting now. By directing the air flow upward, then blasting it horizontally, and finally, deflecting it downward, every condition from take-off to landing will be faithfully reproduced.

While your engine is in the cell, you can watch its performance from moment to moment on a TV screen. At the same time, your engineers and those at AEDC will be taking instrument readings and feeding them into a 19,000-pound electronic brain—one of three at the Center. There, 2,700 vacuum tubes will work up a fever, relieved by enough air-conditioning apparatus to cool a small theater, while they blend this raw data into useful information.

TV for the boys at home. In 30 seconds the big computer will type out answers to problems that would keep a

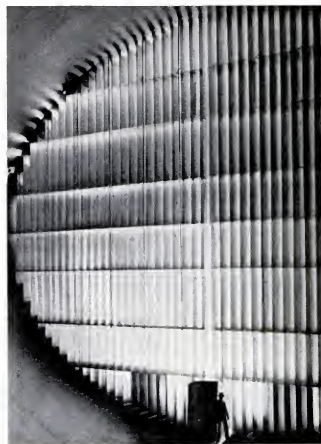
[Continued on page 258]



WORLD'S BIGGEST COMPRESSORS have 18-foot rotor drums. At 600 r.p.m., each of the 96 blades on this drum exerts an 800-ton tug.

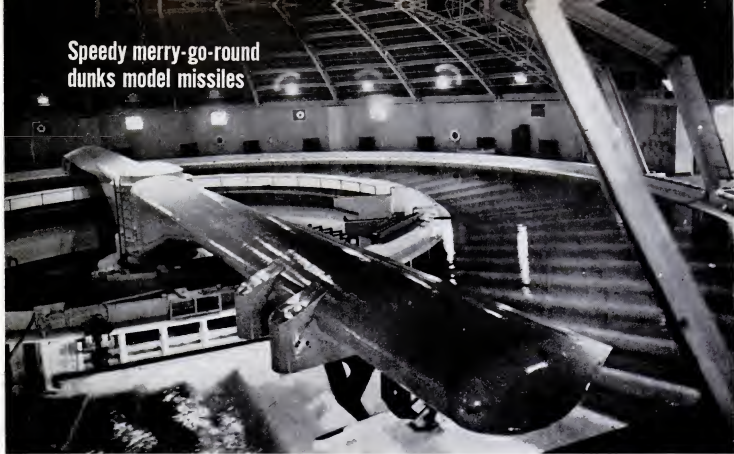


TWO END MOTORS in air-compressor driving train weigh 225 tons apiece. Each contains over 31 miles of wire, develops 83,000 hp.



BANK OF LOUVERS, of curved cross-section, will bend the flow of supersonic air around a right-angle elbow in Propulsion Wind Tunnel.

Speedy merry-go-round dunks model missiles



Water "Tunnel" Checks Behavior of Weapons at 100 Knots

WHIPPED at high speed through a million-gallon circular tank of water, missile models underslung on this 122-foot beam are studied to see how different shapes behave when

launched into water from the air. British Admiralty experts conduct hydrodynamic research at Teddington in the same way that aerodynamic tests are made in wind tunnels.



New Solid Fuel Can Be Handled Like a Liquid

FLUID coke—so called because, suspended in a stream of air and oil vapor, it can be poured like a liquid—is now being used commercially for the first time. Public Service of New Jersey has substituted it for oil at a big generating station. The new fuel, which looks like black sand, is shown here being poured into a hopper-bottom railroad car at a Billings, Mont., Esso refinery.

Tarry residues from gasoline refining are used to make the fluid coke. Esso men say that the process also enables them to extract an extra 10 percent of gasoline from a barrel of crude oil.



Un-Parking Gadget to Get You Out of Tight Curb Squeeze

CHARLES RYAN and Co., Ltd., London, say that they have just the gadget to un-park your jammed-in car: two 2½-foot steel plat-
forms on ball-bearing casters. You put one

under each rear wheel, drive up on them, get out—and push. With clearance forward, why couldn't you wiggle out yourself? Ryan doesn't say. Power steering, anyone?

Giant Electric Stacker Picks Up Logs by the Truckload

CAPABLE of lifting an entire truckload of logs with each bite, this Texas-built electric log stacker makes quick work of loading and unloading. The operator of the big rubber-tired LeTourneau machine pushes its 10-foot

wedges under the logs, clamps them in its jaws, lifts them on the upright I-beam rails, trundles them off, and stacks the whole mass of logs neatly on a logging-camp truck or lumber-mill processing or stock pile.



**20 tons of timber
handled like firewood**

New Corvette Challenges Thunderbird and Hawk

Three snappy products of the sports-car designers are off and running with fresh packages of power under their hoods—and cockpit gadgetry galore.

By Ken W. Purdy

GENERAL MOTORS has made more money than anybody else has earned since the first man sold a stone spear for a dozen clamshells, but all this economic muscle hasn't prevented the Ford Thunderbird from knocking the ears off Chevrolet's rival car, the Corvette.

The Corvette, if the sordid truth were faced, was nobody's dream car. It was a dumpy, lumpy-looking wagon, strictly non-sexy from the tea-strainer headlight covers to the dual pipes with their unhappy tendency to stain the early fiberglass bodies. With the flathead six-cylin-



THE AUTHOR: Ken Purdy, shown with the Studebaker Golden Hawk in South Bend before his trial spin in this new U.S. sports car, is a well-known writer on automobiles. He is the author of two books about cars, *Kings of the Road* and *Bright Wheels Rolling*, and is a former editor of *True* and *Argosy* magazines.

CHEVROLET'S CORVETTE

der engine it wouldn't really go, and even wearing the alternative eight-cylinder 195-horsepower version, it was no competition sensation.

There were a trifling few other things wrong with it, too. When you bought a Corvette, you bought an automatic transmission, like it or not, and a good many citizens didn't. The top required the usual two men and a crowbar to erect, and in a rainstorm water came through all the places you could see and some that you couldn't.

Out with the old. So the Corvette didn't catch on and production trickled down to a few cars a day, ending altogether in December. What now? A new Corvette, and a horse of quite another color, even literally: You don't have to settle for Polo White or Pennant Blue any more; you can choose among a half-dozen colors, with harmonizing interiors. But there's more than a new paint job.

Styling changes in the '56 Corvette are slight, but they have improved the look





FORD'S THUNDERBIRD



STUDEBAKER'S GOLDEN HAWK



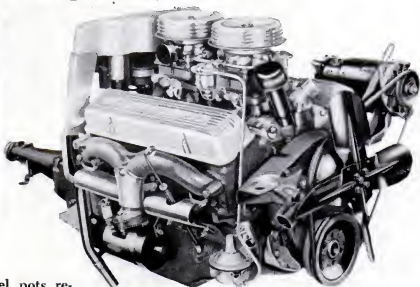
of the car enormously. (It's still fiberglass, of course.) The bashful-looking headlamps faired into the front wings are no more. They've been replaced by the standard, aggressive lights more nearly

like the rest of the Chevrolet line. The engine-compartment lid has a pair of molded contour lines running straight back, probably strictly non-functional, although they might create enough turbu-



DEEP INDENT IN SHEET METAL runs from the wheel well back into the door.

Details on Corvette show marked changes in style and power



V-8 ENGINE with two four-barrel pots replaces last year's somewhat reluctant six.

lence to louse up the flight pattern of a large June bug, at that.

The biggest body change is on the side of the car, an indented airfoil form running from the wheel arch into the door. The old Corvette looked like a dish of vanilla ice cream under a sun lamp; this one has the doing-60-standing-still appearance that motorcycle cops find so compellingly attractive.

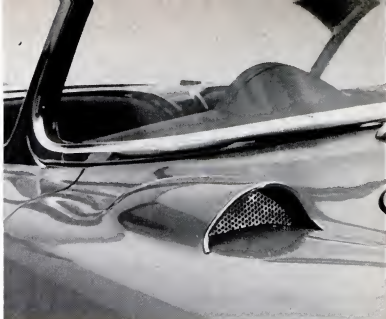
Automatic top. It's good inside, too. There are wind-up windows and an automatic top. It folds out of sight under the same lid that hid the old one; but when you push the button on the '56, the lid rises silently, the top comes out and spreads itself, and you're in business. It's alleged to be watertight, too. Or you can have a hardtop if you'd rather.

The steering wheel is the big tip-off: testimony to GM's new-found interest in competition and its determination to take no more guff from T-bird drivers. It's the kind of wheel that costs about 60 bucks to buy off the peg: three flat, drilled-out steel spokes, a leather-covered rim, strictly Grand Prix with a touch of luxury. The spindly gear-selector level of yesteryear is gone, too, replaced by a stiff and stubby handle governing a brand-new close-ratio manual box. In case you've forgotten how to run a stick shift, the four gear positions are embossed in a metal plate on the floor.

Horsepower is up to 225 and Chevrolet engineers are willing to be quoted as saying that it may increase further. Since nobody at General Motors from the elevator operators up ever says anything just to hear himself talk, this means that another 25 or 50 horses are in the stable waiting for somebody in Dearborn to raise the ante. This is a 265-inch engine, running at 9.25:1 compression with two four-barrel carburetors, solid lifters, a modified inlet and exhaust system and a hot camshaft. Only a prototype was available when I was in Detroit, so I didn't drive the car, but obviously it will be quick, and it should come as near as no matter to 120 miles an hour.

For police cars and Corvettes. No basic changes have been made in the Corvette chassis except for some minor diddling with the front end. It's still the box-girder X-braced frame carrying the front stabilizer bar that Chevrolet uses only on its police cars and Corvettes. Chevrolet engineers were satisfied with the handling qualities of the car as it was, and so apparently were most of the customers, although there were some notable dissenters from that opinion among the competition-minded sports-car crowd.

Incidentally, Chevrolet executives say that careful vote-taking among Corvette owners dictated all the changes that were made, and that the customers have been



SIMULATED AIR SCOOPS adorn the front fenders. The wheel covers have make-believe knockoff hubs.

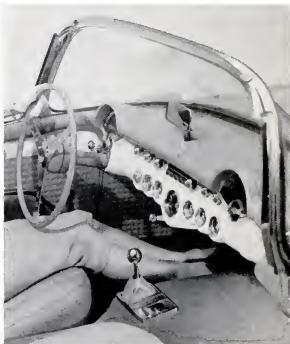
STANDARD-TYPE HEADLIGHTS groom the front of the Corvette. Six body colors are offered for '56.

given everything that they asked for with one exception: the bumpers. More drivers than not disliked them on the old Corvette, but the designers haven't changed them in the '56 except to beef them up a bit in front. Esthetically they are right, since the bumpers do flow nicely into the lines of the automobile, even if they don't afford as much protection as those on a Mack truck.

Ready for the races. This is a good-looking motorcar, certainly it's a comfortable and convenient fast touring car, and it is probably much more than that. It doesn't take a major prophet to suggest that the Corvette will be showing up in competition next summer. Before plans for the car were frozen, Chevrolet designers had initiated conferences with Sports Car Club of America officials, to be sure that the car met SCCA competition regulations. This is a far cry indeed from GM's attitude of a half-dozen years ago, when racer Briggs Cunningham's request for help in setting up his Le Mans/Cadillac was answered by a form letter suggesting that he drop in and see what was on the floor at the New York dealership. The dope is that well-staffed Corvettes will run this year at Sebring and Le Mans.

In terms of competition, Chevrolet is thinking about Ford, as certainly the

(Continued on page 262)



SHIFT LEVER ON FLOOR connects directly to the transmission housing. Better linkage supplies faster and more positive shifts.



BUMPERS ARE BEEFED UP but the grille remains unchanged. The car is an inch longer overall.

Good-by, carburetors!

Fuel Injection Is Coming This Year

By Devon Francis

INJECTION PUMP is heart of fuel-injection system. Fuel enters it under pressure of 17 pounds per square inch, created by a secondary, electrically driven pump. It is ejected to cylinders at 100 to 300 pounds' pressure, depending on volume of flow, through ring of outlets. Upright cylinder controls the fuel volume.



BEFORE the year 1956 becomes history, Detroit will be building fuel-injection automobiles. They will have no carburetors. They will serve as a time fuse for an explosive revolution comparable to the introduction of the high-compression V-8 seven years ago.

Fuel injection will:

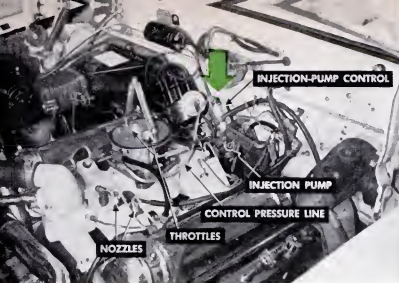
- Boost full-throttle horsepower output by 10 percent on current engine designs. When engines are redesigned specifically for fuel injection, horsepowers will climb as much as 25 percent *without an increase in piston displacement.*
- Increase gas mileage by five to 15 percent. That's as much as three miles per gallon.
- Spark a change in automobile styling that could drop hood lines by several inches, with an accompanying increase

in visibility through the windshield.

Fuel injection may be offered on some 1956 cars. More probably, it will come on 1957 models, out next fall. It's likely, in the beginning, to be an extra-cost option. The price should be in the neighborhood of that for power steering—maybe around \$100.

Eventually the carburetor as an engine accessory will disappear. Fuel injection is that good. I know. I've driven a car equipped with it.

Silk-smooth. It whizzed away from a stop light. Unlike a carburetor car, this one had no "flat spots" in accelerating. It responded instantly to the gas pedal. Snubbed down by the brake to five miles an hour in high gear, it was silk-smooth, and this with a standard three-speed transmission. I got no back talk, no shud-



INSTALLED IN CAR, system requires much less space than a carburetor. Air cleaner is removed here to show throttles. One car fitted with experimental fuel injection is using 14 percent less fuel at speeds up to 60 m.p.h.



SOLE RECIPROCATING PART of injection pump is this plunger, which is a combination rotary valve, pump, and fuel distributor. Cam and roller shuttle it horizontally to pump, and to open or close some ports. Sleeve meters fuel.

der, no bucking. At idle, the engine was so free of vibration that I had to tap the accelerator to see whether it was turning over.

This was an experimental car of popular make, owned by the American Bosch Division of the American Bosch

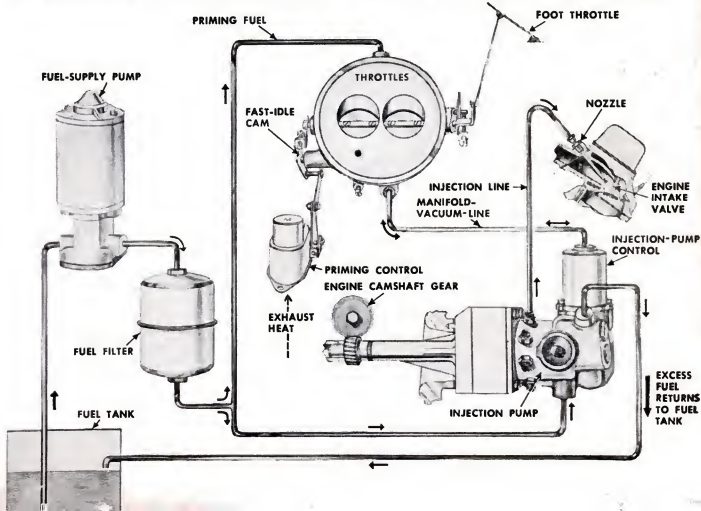
Arma Corp. Bosch prefers that the car's brand name be withheld for the present—negotiations for wide sales of its fuel-injection system are under way in Detroit.

Fuel injection, at long last, will lay the ghost of the carburetor bugaboo that has plagued the gasoline engine since

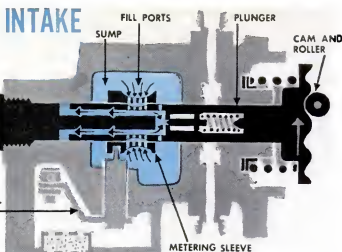
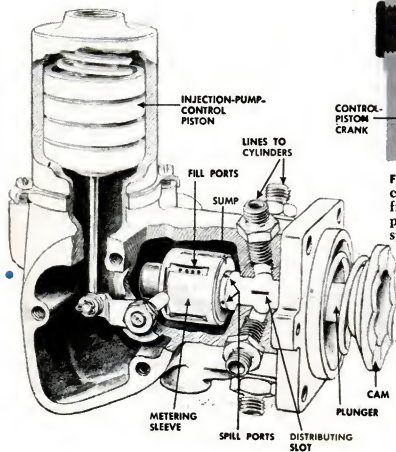
Fuel-injection system has seven main parts

FUELING CYCLE starts at *throttles*, which admit air to intake manifold. Manifold vacuum governs *injection-pump control*. *Fuel-supply pump*

feeds gas to *injection pump* through filter. *Nozzles* feed cylinders. *Priming control* supplies extra gas to manifold for cold-engine starts.



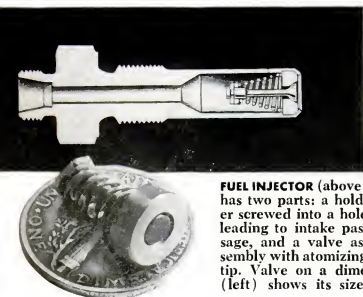
Injection pump has three-phase operation



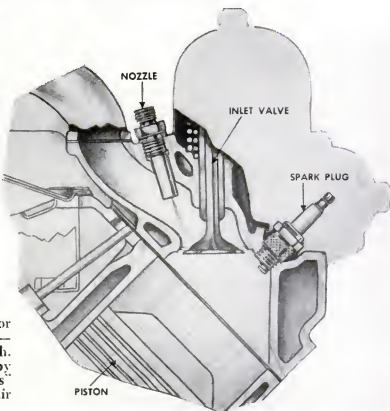
FLOODING THROUGH FILL PORTS—opened by cam and roller—in plunger and sleeve, fuel from sump fills interior of plunger. Control piston has positioned metering sleeve with respect to spill ports. As the plunger rotates . . .

CUTAWAY OF INJECTION PUMP shows spring-loaded piston in "control," which responds to vacuum level in manifold, representing volume of air being delivered to cylinders. Through crank, piston moves sleeve on plunger to meter fuel and discard excess. For operation, see panel of drawings at top.

Tiny atomizers deliver cloud of fuel to each cylinder

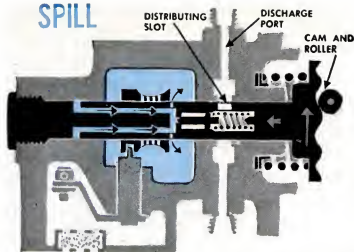


FUEL INJECTOR (above) has two parts: a holder screwed into a hole leading to intake passage, and a valve assembly with atomizing tip. Valve on a dime (left) shows its size.



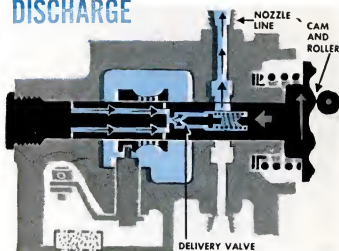
INSERTED BEHIND INTAKE VALVE (right), injector valve—of simple, outward-opening poppet type—yields at pressure of 70 pounds per square inch. Atomization of any quantity of fuel is assured by nozzle design. Having no guides, the valve "floats" in its assembly and is self-aligning. Incoming air and atomizing fuel serve to keep it cool.

SPILL



... fill ports close, and distributing slot registers with one of the discharge ports to the nozzle line. Pumping stroke now starts, and excess fuel trapped in plunger is forced out through spill ports into sump. As cam ...

DISCHARGE



... introduces third phase, sleeve covers spill ports and remaining fuel is forced through delivery valve out through distributing slot to nozzle line feeding cylinder. End of stroke completes injection. Cycle repeats for next outlet.

its invention. The basic difference in its design is that it separates two functions of the carburetor. A carburetor delivers air to an engine. It also delivers fuel vapor. It mixes the two and pipes them to the cylinders through the intake manifold.

A fuel-injection system delivers only air through the intake manifold and, separately, sprays fuel into the cylinders. Of all the components of an engine, the carburetor, where fuel and air are mixed, has been the zaniest part with which designers have had to cope.

Carburetion is always a compromise, even with the newest of the four-barrel jobs that try to accommodate the fuel-air intake to engine speed and load. It causes a fuel-wasting, excessively high idling speed. Vibration is inevitable in most engines if satisfactory performance at cruising speeds is to be obtained. And at top speed, cylinder starvation results.

Manifold limitations. The different cylinders in a carburetor engine never run at the same temperature. That's because fuel is never distributed to them in precisely the same amounts. The manifold system is too clumsy at metering it. At high engine speeds, the cylinders cry vainly for air. That's because the intake manifold must be just so big, and no bigger. If it's too big, the air moves too

slowly and the gas vapor condenses at low speeds.

Carburetors require heat to vaporize the fuel before delivery to the cylinders. Heated air expands. That means that a lesser weight of it reaches the cylinders. So all sorts of dodges are used to maintain combustion, or "thermal," efficiency. These include ever-higher compression ratios, trick-shape cylinder heads and leaded fuels.

The carburetor has all these faults, plus a tendency to ice up. And it's the carburetion system that causes vapor lock.

Fuel injection automatically obviates all this.

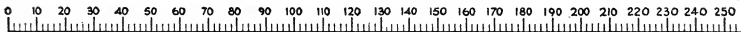
Abundant air, metered fuel. In a fuel-injection engine, the air comes from one source, the fuel from another. They are mixed inside, or just as they enter, the engine cylinders. The air is supplied in abundance. It's cool. It's dense. The fuel is metered in exact amounts, right down to a fraction of a cubic millimeter. Every cylinder gets a like amount.

With fuel injection, horsepower and gas economy go up because an engine extracts more zing from the fuel fed to it.

A car is peppier at take-off because better "breathing" shaves 500 to 1,000 revolutions off the r.p.m. at which the engine reaches its maximum torque, and

[Continued on page 272]

Auto Buyer's Score Card



Scale drawings give you dimensions, and tables cover the chassis, engines and transmissions of the new U. S. cars.

WHETHER it's the headroom in a Buick, the fuel requirement of a Studebaker Commander, or the radiator capacity of a Rambler that interests you, the detachable 16-page section that follows will give you the answers. These pages list detailed specifications and dimensions for 1956 U.S. passenger cars, prepared from data provided by the makers themselves.

Drawn to an identical scale (1 inch to $3\frac{1}{4}$ feet), the two-view drawings of 20 cars are marked with 22 of the most useful physical measurements of a car. But you can readily obtain other dimensions besides those that are lettered in. Simply measure off any dimension (in the plane of the view) that you wish, using a ruler, a pair of dividers, or simply two tick marks on a scrap of paper. Then lay the measurement against the scale that is printed across the center of each page of drawings and read off the actual dimension.

Some notes on the tabular data:

- Prices are suggested factory retail prices, including Federal excise taxes but without state or local ones, for a four-door sedan with standard equipment.
- Basic transmissions listed are those so designated by the maker, even in cases where the majority of cars built in that

particular series may be fitted with an extra-cost transmission.

- Weights listed are for four-door sedans, with standard equipment but without a supply of gasoline or water.
- Turning circles of different diameters to the right and left are averaged.

How to detach Special Auto Section



THE NEXT 16 PAGES can be detached as shown, carried in your pocket, or filed for future reference. They have been attached to the magazine

in a novel way to make this easy. You will find them jam-packed with figures that you can cite when discussing cars with your friends.

**Francis W. Davis,
Inventor**

"The Father of Power Steering"—that's what the Smithsonian Institution calls him—is shown at his roll-top desk in Waltham, Mass. A working model of a vacuum pump he built at 16 is beside him.



Mr. Power Steering's Ship Comes In

But he waited 25 years for royalties on the invention he demonstrated on a Pierce Arrow.

By Hartley E. Howe

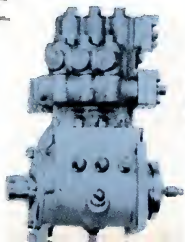
THIS year, Detroit figures, better than one in four new cars will be sold with power steering—more than 2,000,000 units.

That's a remarkable record for an accessory that did not hit the market until 1951.

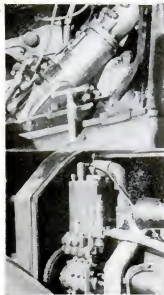
Sounds like a good way to rake in money, you think? Well, power steering's father waited for 25 years, with rake in hand, before the royalties even *began* to flow. His history is instructive for inventors everywhere who expect the golden



In this Pierce Arrow roadster Davis installed his first power-steering unit, drove to Detroit and demonstrated it to the automobile industry in 1926. At right are the elements of the same prototype unit—hydraulic pump (left) and steering gear—recently placed on display in Washington's Smithsonian.



Power Steering: the Pioneer Unit



Original hydraulic steering gear (upper photo) and its large engine-driven pump are shown in Davis' Pierce Arrow.

Idea Factory



Inventor (right) and assistant, outside shop where they have worked since 1922.

shower to begin the moment that a patent application is filed.

Power steering was ready to go in 1926. This was a quarter-century before its first passenger-car sale. Today Francis W. Davis, the tall Yankee who invented power steering, can afford to be philosophical about that quarter-century of disappointments and frustrations. Currently, more than half of the power-steering units manufactured are licensed by him. But philosophy was about all he had to nourish his hopes in the long years during which his patents aged fruitlessly.

Davis was confident in 1926, when he set out for Detroit in his Pierce Arrow roadster from his home in Waltham, Mass. Beside him was George Jessup, a highly skilled designer and toolmaker who had turned Davis' idea into precisely fitted metal. Under the Pierce's hood was an exciting new power-steering mechanism. Ahead was a market, ready to be captured.

Davis was not unknown in Detroit. He had gone to work for Pierce Arrow after being graduated from Harvard in 1910, and had risen to chief development engineer. He was highly regarded in the Motor City. In 1926 he was an independent consultant, a man who knew the ropes.

His invention, moreover, was no baling-wire lashup. It used hydraulic pressure, something that had interested Davis ever since he had investigated a truck lift invented by a struggling mechanic named Gar Wood. The heart of his steering mechanism, covered by one of his two pending patents, was an "open center" valve. Whenever the driver turned his steering wheel, the valve diverted pressure against a piston that moved the front wheels.

His other patent application covered a way to prevent oversteering. When the driver turned the wheel, he had first to overcome the resistance of a little spring before the valve could move. Today, this spring is what differentiates "when needed" from "full time" power steering.

In a whirlwind tour of the auto companies, Davis and Jessup saw 26 engineers in 10 days. Each engineer was enticed into driving the Pierce Arrow himself, to see that the big car could be steered as easily as a bicycle. All of them were impressed with the new device, and they said so.

The General Motors men were the most enthusiastic. Engineers from the Saginaw Division, which made GM steering gears, thought that power steering might be a natural

for Cadillac. And when a one-year option was taken early in 1927, Davis felt that he was in.

But development turned out to be an interminable business. The device had to be fitted to the Cadillac engine. Bugs had to be worked out in long test programs. Parts had to be redesigned to reduce costs and simplify assembly.

Disaster nearly sank the whole project once. Davis glanced under an experimental power-steered Cadillac in which GM's Boss Kettering and some other top brass had just been zooming around the test track. A tie rod underneath didn't look right. Taken off, it proved to be cracked almost through—so weak that Davis easily snapped it across his knee. The defect had nothing to do with power-steering, but it was a close thing: Davis knew that a headline-making smash could well have destroyed his hopes.

GM's option was renewed each year as development ground slowly on. While making his living as a consultant, Davis worked in his spare time at trying to add road feel to his steering system. He finally hit on a trick of bleeding off some hydraulic pressure to *oppose* the movement of the steering valve, an amount that varied with changing road conditions.

"Hydraulic reaction" was developed in 1931, the same year that Davis received patents on his open-center valve and centering spring. By this time Cadillac was ready to offer Davis a four-year agreement guaranteeing him a small annual minimum payment. But the inventor thought that the GM patent lawyers were hard bargainers. After several days of haggling, Davis put on his hat and walked out. Half an hour after he reached his Detroit hotel, the phone rang. "You win," said the GM lawyer. "We'll sign it the way you want it."

By 1933 a power-steering unit in one of Cadillac's big 12-cylinder jobs was working fine. The time had come, the engineers said, to go into production.

But the brass disagreed. The depression had set in like a cold wave and production would probably be less than 15,000 Cadillacs in the coming year. Spread over so few units, tooling costs would push the retail price of power steering so high that the public wouldn't buy it. Production plans were called off and GM asked Davis to give up his guaranteed minimum payment. He refused, and 1934 found the inventor right back where he had started, looking for a customer.

It took two years to find one. Then Bendix signed up with Davis. But Bendix built no cars itself; it made parts for others

Doer and Thinker



Davis (right) with George W. Jessup, master machinist, who has been translating the inventor's ideas into metal for a third of a century

Power-Steered Chevrolets, 1940



These Chevrolet armored cars, built for the British in 1940, were the first vehicles to go into production with Davis power-steering units.



Davis demonstrates a recent invention: a suitcase designed for do-it-yourself portering.

—on order. By 1939 Bendix had produced exactly 10 power-steering units and sold two of them, mounted on trucks.

Meanwhile, Davis stuck to earning a living—and improving power steering. In 1941 he patented a lighter and more compact method, called “axial movement,” to make the steering wheel close the hydraulic valves. The lower end of the steering column is threaded to mesh with gears. When the column is turned, the initial resistance of these gears makes the column move in or out slightly, like a bolt in a threaded hole. It is this motion—only .060 inch—that Davis harnessed to close the valve.

In 1940 Buick had bought and installed three power units. They worked fine and costs were figured and okayed. But before marketing could get under way, power steering was dealt a second body blow. Civilian auto production, with or

without power steering, went out with Pearl Harbor.

Military needs, however, gave Bendix and Davis substantial orders. Already the British Army had ordered them to go into Chevrolet armored cars. The American forces put in a similar order. Other units went into huge tank-recovery vehicles, which were heavy and hard to steer.

With power steering tested on the battlefield, Bendix was able to find off-the-highway markets for it when peace came. Units went into huge earth-moving and track-laying vehicles. Others were adapted to farm tractors, so that even the kids could plow.

Davis, however, was still after big game—the passenger-car industry. But at Buick he found that the three cars with power steering had disappeared. So had the executives familiar with power steering. Their successors were not interested in his idea.

The general reaction went something like this: Sure power steering's good. But we don't want it—not now, anyway. In the first place, our competitors don't have it, so we don't need it to keep up. Besides, this looks pretty complicated—who knows what hidden maintenance problems might turn up? What's more important—let's face it—we're selling all the cars we can make right now. Why should we invest millions in new tools?

In 1948, Davis' original 1931 patents ran out and the basic principles of his power steering were open to everybody. Fortunately for him, however, the axial-movement patent, taken out in 1941, still remained to give Davis units a

[Continued on page 270]

New Ideas

FROM THE INVENTORS



1 Truck to Stow Its Cargo. Instead of carrying cartons into this truck, loaders would stack them on a pallet that would roll on rails recessed in the floor. Unloaders

could push each flat pallet, with its cargo, back to the door. The empty flats, stacked endwise along the wall, could be moved toward the door and lowered for loading.

2 Wiper Blade to Scrape Sleet. This stiff-edged scraper would clip around a windshield wiper blade and could be slipped off quickly when it wasn't needed. It would be made slightly narrower than a standard blade so that the rubber edge would stick out a little and bear against the glass brushing away scraped ice.



3 Fan Muffler To Hum You to Sleep. Blowing through this porous muffler, an ordinary electric fan would sound, according to the inventor, like "the sighing of wind through trees." The pleasant, regular drone, he says, would help you fall asleep. It would also drown out sleep-destroying noises of traffic, neighbors, cats, and dogs.



MORE New Ideas from the Inventors



4 Shoes to Warm Your Feet. You couldn't blame cold feet on the weather if you had a pair of boots like this. Side opening compartments would be provided in the soles for the kind of chemical that gives off heat when wet. By adding a few drops of water now and then, you could keep your feet warm during a day outdoors.



5 Bench to Hide or Hold Ironer. It would be difficult to turn an ironing board into a handsome piece of living-room furniture. This design, however, would hide the board inside an attractive, lift-top bench. Short, collapsible legs—and the bench itself—would form the work stand when the ironing board was set up.

7 Train Sign to Call Stations. Passengers wouldn't have to scurry to get off a train if signs and loudspeakers announced each station a few minutes before arrival

time. A tripper for the film-strip signal mechanism would be geared to an axle of the car and thus synchronized with the distance that the train had traveled.





6 Dial to Show Wheel Direction. A driver might find it easier to get in or out of parking spaces if he could see which way his wheels were pointing. Linked to the steering gear through a flexible cable, this device would show wheel position on a dashboard indication. It could be factory-installed or attached to present cars.

8 Bell to Tell When You're Out. Normally this button would ring a doorbell in the usual way; but when you went out or just didn't want to be disturbed, you'd switch off the bell. Pushing the button then would light a sign telling visitors you were not at home. You could set a dial on the sign to announce the time of your return.



9 Electric Steamer to Peel Paper. With this wallpaper remover you wouldn't have to pipe live steam to a wall or grapple with a hand-held steam tank. Cold water, piped from a separate tank, would be sprayed through an adjustable nozzle. The electric faceplate of the peeler would turn the spray to steam right on the spot.

U.S. patents on these inventions have been granted to: 1. Alfred M. Gildersleeve, Brooklyn, N. Y.; 2. Samuel N. Kagan, Detroit, Mich.; 3. Max H. Leavenworth, Dallas, Tex.; 4. Edward T. Behner, Cleveland, Ohio; 5. Solomon B. Rudans, New York City; 6. Robert H. Brink, Newark, Del.; 7. Benjamin B. Kirby, Kansas City, Mo.; 8. Mario G. Lazzari, Bergamo, Italy; 9. Jerral E. Lawton, Buffalo, N.Y.

Mechanized Section Gang



Track machines renew ties on the Santa Fe.

THERE are approximately a billion crossties on America's railroads. And while a creosoted tie lasts 30 years, or roughly three times as long as the rails above it, at least 33 million ties must be replaced each year to keep main lines, branches and yard tracks up to par. To do the job costs more than \$150,000,000: \$3 for each tie plus \$2.15 for labor if the tie is installed by hand.

There isn't much that the railroads can do about the cost of ties. But to whittle down replacement bills they are



1 SPIKE PULLER heads the parade. Working like a huge pair of pliers, its hydraulic pulling tool can be swung over either of the rails.



4 TIE BED DIGGER cleans out the cement-hard ballast after the tie has been removed, deepening the trench for a new and heavier tie.



5 TIE INSERTER uses a cable and butting plate to shove the new tie into place after the end ballast has been cleared out by hand.

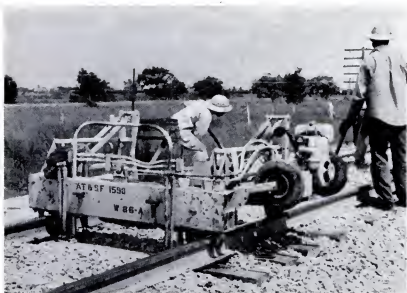
Now Lays Railroad Ties

working with equipment manufacturers to develop fleets of small, single-purpose machines that will do the work faster, better and cheaper than the old-time section gangs. To make good, the equipment must be highly mobile, husky, easy to operate, and inexpensive to maintain.

The robot trackworkers shown here are among the most efficient yet built. Manned by a team of 31 specially trained Santa Fe maintenance-of-way workers, they whisk out old crossties and shove in new ones at a cost of 93 cents

a tie—a saving of more than half over the hand-jack, ballast-fork and spike-maul method.

Any one of the machines can be lifted on or off the rails by one man or two, and each member of the crew knows how to operate all seven. That means that manpower can be concentrated on any part of the work that lags, preventing the fleet from bunching up. An outfit like this can remove and replace 125,000 ties a year—or enough to completely re-lay 47 miles of track.—*Henry B. Comstock.*



2 RAIL LIFTER locks onto both rails and hoists them clear of the tie plates, hydraulically. With the plates removed, the tie is freed.



3 TIE REMOVER now goes to work. Gripping the rails, it pushes the tie out by applying three thrusts with a prong-tipped ram.



6 MULTIPLE TAMPER next compacts the ballast under the tie. Two machines are used, one to work on each side of the track center.



7 SPIKING CARRIAGE. Tie plates must be inserted by hand, after which air hammers on this air-compressor drive in the spikes.

New for Modern Living



1 Insulated vest permits unrestricted arm movement for active outdoor work or sports. A vinyl-foam lining keeps out wind and cold, and an extra long cut at the back lends added protection. Light and buoyant, the lining is said to keep the wearer afloat in case of any accident on the water.

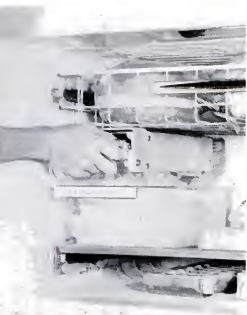
3 Automatic davenport unfolds like a convertible top. A push button starts a hydraulic pump linked to cylinders at the pivot arms, to open or close the bed. There isn't enough pump pressure to fold up the bed while you're in it, nor can the sofa be opened accidentally if anyone is seated on it—instead, a fuse blows out.

Further information about the products described on these pages can be obtained from: 1. Olive Lucena, 526 Front St., Lake Linden, Mich.; 2. Tappan Stove Co., Mansfield, Ohio; 3. United States Bedding Co., St. Paul 14, Minn.; 4. Frigidaire Div., General Motors Corp., Dayton 1, Ohio; 5. Zenith Radio Corp., 6001 W. Dickens Ave., Chicago 39, Ill.; 6. Bell Electric Co., 1844 W. 21st St., Chicago 8, Ill.; 7. Precision Products Co., Cupertino, Calif.; 8. Kelvinator Water Coolers, 265 N. Hamilton Rd., Columbus 13, Ohio.



2 Cold oven cooks with microwaves. If you'd like to invest \$1,200, you now can have most of your cooking at home done in a cold electronic oven. It works by ultra-high-frequency waves of the kind that transmit television pictures. They cook food without heating the oven walls or the dishes in which it is prepared. The oven is fast, too. You can broil bacon on a paper plate in two minutes, bake a cake in six, and cook a five-pound roast in half an hour.

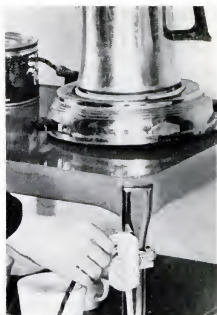




4 Ice ejector in the freezer of this refrigerator forces ice cubes out of the tray when it's pushed in upside down. Cubes drop into a storage bin below, which holds up to five pounds of ice. The temperature of the freezer keeps the cubes from sticking together while stored in the bin.



5 A throbbing alarm is built into this watch. A stem above the winding stem sets it. At the hour set, a tiny hammer striking a pin causes the back to vibrate against the wearer's wrist. The watch was designed for the hard of hearing, but it could be used as a silent alert by anyone.



6 Clamp-on outlet with extension cord brings power to tables, workbenches, barbecue carts and other metal-based equipment with round or angle legs. For safety, a cap over the outlet must be turned to admit the plug; it snaps shut automatically when the plug is removed.



7 Electric scissors cut smoothly without effort by just being run through the material. Plug them in, press the starter button, and the blades snip through thin or heavy fabrics in fast, straight lines or slick curves. The shockproof plastic case fits snugly in the palm of your hand and a six-foot cord gives you plenty of room for cutting out a dress without having to shift the work.



8 Dual fountain. Here's a water "cooler" that dispenses piping-hot water, too—for the coffee break and the lunch hour. A built-in water heater heats the water to just the right temperature for making coffee, tea, chocolate or instant soup. A full tank can serve up 20 cups of steaming water at once, and heat up more at the rate of 40 cups an hour. Two gallons per hour are cooled.

Gus and the Ninety-Day Wonder



By Martin Bunn

I JUST can't figure it out, Gus," Johnny Carter said mournfully. "This was one of my A-1 cars. Had a new-car guarantee. In fact, it *was* as good as new when it left my lot. But he's claiming all over Capitol City that I cheated him—sold him a lemon."

Gus looked thoughtfully at the young car dealer. "Did you give him free service for 90 days?"

"I would have, but he didn't bring it in until the ninetieth day, and then he just wanted it winterized. I put in winter-grade oil, tuned it, and put in antifreeze. I even wired a little tag to his radiator hose showing how much antifreeze I had put in and that it was good for 30 below—that's one of my little service courtesies."

"What's the matter with his car now?" Gus asked.

"It skips. It went for about 10 miles after I serviced it and then it began to miss. There's a short in it somewhere, and neither my mechanic nor I can find a thing."

Gus said consolingly, "There *are* cars like that, Johnny. Maybe it is a lemon. It's not your fault."

"Gus, you don't understand." Johnny Carter ran his fingers through his rumpled hair. "When I got out of the service, my one ambition was to have an automobile agency of my own. I took every cent I had and put it into this used-car lot, hoping to make enough money and a good enough reputation so that I could have the new auto agency everybody said was due to be started

in Capitol City." He stopped for breath.

"But selling one lemon isn't going to ruin your whole career, son," Gus said.

"Oh, isn't it? The guy I sold it to is the brother-in-law of the man who allots franchises in this part of the state. He can make me or break me."

"Why not buy the car back from him for just what he paid for it?"

"That's what Gruntzman wants me to do. In fact, he's insisting. He says I had it rigged so that it would run for 90 days and then, blooey! He calls the car the Ninety-Day Wonder."

"Gruntzman," Gus mused. "Where have I heard that name before?"

"Only every other hour on station WCAP," moaned Johnny. "He's Grunny Gruntzman of Platter Parade, the disc-jockey show. That's him now!" Johnny indicated the music that was coming from the back of the Model Garage.

The music stopped and a voice came through the loudspeaker.

DO I seem a little out of breath, guys and chicks?" The voice made Gus think of maple syrup that had been carbonated. "I've been running," the voice went on. "I started for work, like I always do, in my Ninety-Day Wonder, and like always it began skipping and coughing. So I had to push it all the way to the studio." In the background there was a peal of laughter from some studio guest. "It tried to turn in at the lot

.....
"Now," said Gus, "if you people will step back, my little expert will go to work."



where I bought it, but I won't let it go home until the jerk that sold it to me gives me my money back. I wonder who he'll sell it to next?"

Johnny ground his fist into the palm of his hand.

"It won't be long before everybody in Capitol City knows who he's talking about. I'll be ruined."

Gus put his hand on Johnny's shoulder. "Son, we've got to prove he's wrong and make him eat his words. You tell him to bring his Ninety-Day Wonder in here."

"I'll do it, Gus. Thanks a lot!" Johnny waved from his car window and was off down the road toward Capitol City.

Gus looked at his watch. It was six-thirty. He walked to the washroom at the back of the shop. As he passed Stan Hicks, he said, "Can you hold the fort until closing time? I'm going to the inter-city basketball tournament with Red Plummer." Red was sports editor of the Capitol City Times.

Stan whistled. "Free seats again, Gus? Boy, it sure pays to have friends in the newspaper business."

The next afternoon Johnny Carter was back again. His face was long. "He won't come," he told Gus. "He just wants his money back."

Gus filled his pipe thoughtfully. "Let me get a couple of things straight, Johnny. Gruntzman had no complaints about the car during the 90-day guarantee period."

"Right."

"He brought it in to have it winterized on the day the guarantee ran out. Was that just a coincidence?"

"I think so," Johnny said. "He liked the car up to that time."

"You tuned the car, changed the oil and put in antifreeze. Right?" Johnny nodded. "And you tied a card saying how much antifreeze you had put in and

what temperature it was good for on the radiator-hose connection."

"Most service stations don't do that," Johnny admitted, "but I thought people might like it."

"Good. Now you run along. I've got a couple of phone calls to make."

THE result of Gus's first call appeared in the Capitol City Times the following morning. It was a small advertisement: "I specialize in fixing Ninety-Day Wonders." It was signed: "The Model Garage, Gus Wilson, Prop."

The result of another phone call appeared as the first paragraph in the column, "Red Plummer

Looks At Sports":

As readers of this column know, our motto is: "If you can't be an athlete, be a good sport." A certain radio disc jockey has been making jokes about his Ninety-Day Wonder, a car he bought from a local second-hand-car

dealer. That may be fun for the disc jockey, but it's pretty hard on the man who sold him the car. There is an advertisement elsewhere in this paper by a man who specializes in fixing Ninety-Day Wonders. Do you suppose this certain disc jockey will accept his invitation? Do you think he really *wants* his car fixed?

Gus turned to Stan, who had been reading over his shoulder.

"Let's hear what the opposition has to say." They walked to the back of the shop and turned on the radio.

A voice faded in. It was Grunny.

"—but your friend Grunny isn't going to take this lying down. No, sir! I'm going out to this Model Garage this afternoon—"

Gus chuckled. "I knew that needle Red Plummer gave him would pay off."

"—and I've arranged for WCAP's mobile unit to accompany me—"

Stan looked at Gus, eyes widened.



"I wish to report an accident."

[Continued on page 252]

How to Build a Rotary Tiller

The toughest part of the machine comes ready-made; powering it with the engine from your lawn mower cuts cost way down.

By Howard G. McEntee

RIGHT around home you may already have half the makings of a rotary garden tiller. The engine of a gas-line lawn mower can be worked double shift to cultivate your garden as well as cut the grass. Switching it from mower

to tiller, or back again, should not take more than 10 or 15 minutes.

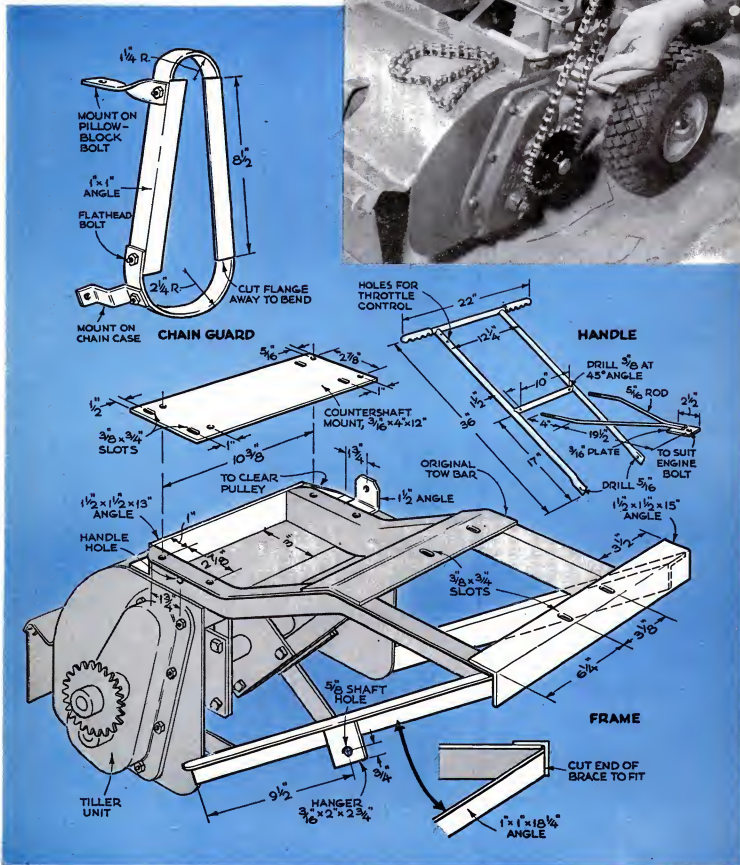
This two-for-one deal saves you the cost of a separate engine, and may put a tiller to work for you at just about half the price that you would otherwise pay. Nor need you be a mechanical whiz to build the machine; the most difficult

**MECHANICS
and
HOMEBUILDING**

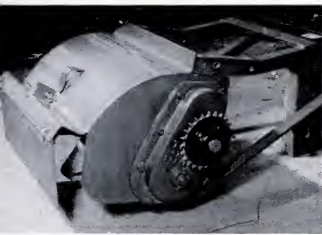


Tiller rotor is driven by a chain from the countershaft

PURCHASED TILLER and H-shaped tow bar are shown shaded in the drawing below. Pieces of angle iron are welded on to support the engine, wheels and countershaft. Adjust chain tension to leave $\frac{1}{2}$ " of slack as at right. If slots do not give enough adjustment, put washers under the spacers. Adjust V-belt tension by moving the engine backward or forward on its mounts.



Housing and rock guard protect the user



BOXLIKE TILLER HOUSING has a reduction unit with a 24-tooth sprocket mounted on its side. In the photo above, the tow bar, crosspieces and braces have been welded on, but countershaft is not yet in place. A hinged rock guard (at left in above photo) shields the user from flying dirt and stones. The machine propels itself; effort is required only to hold it back or guide it over the ground.



parts of it are available already made up.

These are the tiller-head components—the shaft and tines that stir up the ground. A national mail-order house sells a 12" head as an accessory for a small garden tractor.* Costing about \$37, it is a well-made, neatly housed unit with hardened tines, good bearings, a built-in chain reduction and a rock guard. The tines are replaceable.

If your mower engine has a centrifugal clutch and you put 1½"-wide wheels on the tiller, the total parts cost will run about \$52. (The tiller shown cost more because it has heavy-duty 2½" wheels. These make it easier to handle in soft soil, but are by no means a must.) Welding will run four or five dollars if you don't do it yourself, but will still leave the total cost well below that of a comparable commercial machine.

Use all the pieces. With the tiller head you get a drive chain and an H-shaped tow bar for coupling to the tractor you haven't got. Both will be useful.

A boxlike angle-iron frame, to which the tow bar is meant to be bolted, is

welded atop the tiller housing. The first thing to do is "unweld" this. Make center-punch marks along the weld beads, the diameter of a 3/16" drill apart. Run a drill that size in at 45°, just to the surface of the housing. Then use a diamond-tip cold chisel to cut through between the holes. Discard this frame.

Cut a piece of 1½" angle iron to span the full width of the housing, long enough to be welded to the ends as well as to the top. At one end, cut the vertical flange at a slant to clear the countershaft pulley.

Drill the top of the H frame for bolts to hold the countershaft mount. In the vertical flange of one frame leg, drill a hole for a handle bolt. The other handle mount is a 2" length of 1½" angle welded at the end of the housing.

The front crosspiece, a 15" length of angle, projects past the H frame on one side to line up with the housing.

Check your engine. This front cross-piece and the crossbar of the H frame form the engine mounts. The slots shown fit a Model 6 Briggs and Stratton engine; for others, minor changes may be needed.

By careful fitting and the use of extra brackets you could bolt the parts together. But welding makes the job

*Various attachments of this kind can be adapted. The drawings and construction methods described relate to Montgomery Ward's rotary-tiller attachment No. 87-5086 for the Til-Trac garden tractor. Semi-pneumatic 10"-by-1.75" wheels are available from various mail-order dealers at about \$1.65 each.

easier and results in a far stronger structure, with no bolts or rivets to work loose from vibration.

If you have the welding done outside, be sure to cut, drill and fit all parts beforehand. It's smart to clamp them up in a trial assembly. Scrape paint off the tiller head where welds are to be made. Remove the chain case and gasket so that welding heat will not damage the latter.

Wheels. Some commercial tillers have no wheels. But wheels give easier control of working depth, and facilitate moving the machine, especially over paved areas.

You can buy 10" rubber-tired wheels with a $1\frac{1}{2}$ " tread for less than two dollars apiece, or a metal-tired type made for wheeled garden tools for even less. For 10" wheels, weld the shaft hangers into the braces as shown in the drawing. For other sizes, locate them so that the engine will be level when the bottom of the tiller housing is about 1" beneath the soil. With the tines on a hard surface, the engine will slant forward. (As some will stall in this position when the fuel is low, it is important to have the engine nearly level in the working position.)

The drawing on the facing page shows the axle turned down and threaded at one end. You can, instead, use a shaft

collar at both ends, and so avoid machining. Be sure to use the felt seals shown if your wheels have ball bearings, to keep grit out of them.

The power train. It takes considerable torque to spin the tined shaft; an over-all reduction of about 1:16 is required with a $1\frac{1}{2}$ -horsepower engine. The reduction built into the tiller unit has a ratio of about 1:1.5. With an 8" pulley on the countershaft, the V-belt drive from the automatic clutch of the engine shown gives a 1:4.4 reduction. A 10-tooth sprocket on the other end of the countershaft drives the 24-tooth sprocket on the tiller head at a 1:2.4 ratio. Multiplying all the figures on both sides of the colon shows the over-all ratio to be 1:15.84.

If your engine does not have a centrifugal clutch, you can install one or rig a belt-tightening idler controlled by a flexible cable. This is cheaper, but the centrifugal clutch is handier, giving you full control by use of throttle alone.

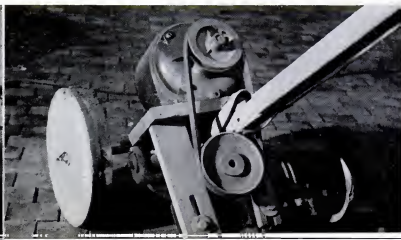
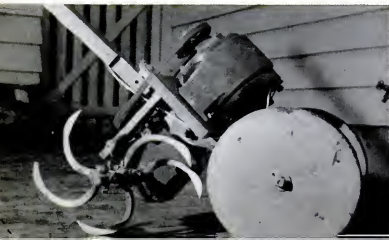
Mounting the countershaft. A $3/16$ " steel plate is mounted on the tow-bar legs with long bolts and spacers. Cut the spacers from $\frac{1}{2}$ " pipe, taking care to get them all the same length. The bearings are bronze-bushed pillow blocks. Slots

A $\frac{1}{4}$ -Hp. Motor Drives This Light-Duty Electric Tiller

WANTING a light-duty rotary tiller, Everett M. Cronk of Ardsley, N.Y., made this electrified one. A V belt from its $\frac{1}{4}$ -hp. motor drives what was once the wringer power take-off on a washing machine. Tines from a hand garden cultivator were fastened directly to the output shaft of this reduction unit, flats being filed on the shaft to key the tines securely to it.

A wooden motor platform is mounted on

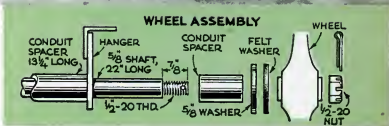
two slotted posts, which can be slid up or down to adjust belt tension. The handle is from a lawn mower, the wooden wheels from discarded lawn furniture. Because the action of the offset tines tends to turn the machine, the builder plans to relocate the transmission to bring the tines closer to the centered handle. He also suggests using a smaller pulley on the motor shaft instead of the one shown, to further reduce rotor speed.



Wheels can be put inside for cultivating close-set rows



WHEELS ARE HELD ON either with a collar at each axle end, or with a collar at one end and a nut at the other, as in the drawing at right. Cut dust seals from $\frac{1}{8}$ "-thick soft felt. For narrow-row cultivation, use a 15" axle, a spacer to fit between the wheels when they are inside the engine-support frame (above right) and felt seals on both sides of the wheel hubs.



for the mounting bolts allow these to be slid forward or back to adjust chain tension. Make sure that the shaft turns freely after all the bolts are pulled tight.

The sprocket is best held on the countershaft with a taper pin. A setscrew will secure the pulley provided you drill a dimple in the shaft for it to seat in.

Both for your own safety and to keep sticks and gravel out of the chain, a guard should be fitted. Cut one flange off 1" angle iron where it is to be bent to a radius, as shown in the drawing on page 176. Use flathead bolts, with the heads countersunk inside the guard, to join the ends and attach mounting brackets, one above, two at the lower end.

Handle is brazed up. Cut $\frac{3}{8}$ " electric conduit for the handle parts. Remove the zinc coating with abrasive cloth where the brazed joints must be made. Flatten the lower ends before drilling them for the $\frac{5}{16}$ " mounting bolts.

The bracing fork consists of two pieces of $\frac{5}{16}$ " rod bent, threaded and brazed to a $\frac{3}{16}$ " plate. This is clamped under one engine-head bolt. With a nut on each side of the handle crossbar, the fork can



FURROWING GUIDE, provided with tiller head, can be set to hold tines at desired tilling depth, or it can be reversed with the hook forward as above. In this position it holds the machine back for deep cultivating or plowing.

be adjusted to raise or lower the handle to convenient working height. Bolt the throttle control within easy reach and slip bicycle handgrips on the top bar. **END**

Fast Spatter-and-Wipe Technique Kid-Proofs Tool Board



I HAD a hard time getting my youngsters to return my tools to their proper places until I spatter-painted the tool board this way, leaving the outline of each tool in its correct position. The spatter method is faster than painting on the outlines and gives a pleasing appearance to the board.

Dip an old scrub brush into a shallow tray of bright paint and draw a stick toward you across the bristles to fling the specks on the board. Cleaning up the spattered tools is quickly done with a cloth soaked in solvent.—*Bob Gilmore, Sonoma, Calif.*

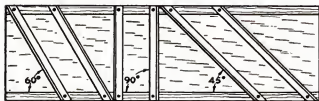


Tracks Guide Portable Saw for Cutting Automatic Angles

THREE pairs of rails let you cut accurate 45°, 60° and 90° angles with a portable electric saw. Cut the rails from a length of

$\frac{3}{4}$ " aluminum angle and screw them to the top of a wood trough made to suit the depth of the saw blade and the width of stock that you want to handle.


Lay out the rails as shown in the sketch to produce the desired angles, and space them so that the saw's shoe plate slides easily in between. Countersink the screw heads flush with the rails. The first saw pass will slot the sides of the box for use.—*Phil McCafferty, Stanwood, Iowa.*




Plaster Casts Make Perfect Templates



PLASTER IS BUTTERED over the side of the model coated with protective petroleum jelly.



EMBED WIRE to add strength, then cover with a second, heavier layer of plaster.



LIFT THE TEMPLATE OFF carefully after the plaster sets, usually in about 10 minutes.

CUTTING a cardboard template to match the profile of a turned chair leg or some other irregularly shaped object is a tough, trial-and-error job. It is often easier to make templates out of plaster-of-Paris, shaping them directly over the original parts that you want to copy. The plaster flows into small cracks and curves, accurately reproducing fine details.

The plaster is mixed with water to a butter-like consistency and spread along a narrow section of the model's profile, about 1" to 2" wide depending on length. On long templates, you can embed a reinforcing wire down the center as shown. When the hardened cast is removed, saw off the rough edge on each side, leaving a center strip from $\frac{3}{4}$ " to 1" thick. Applying shellac will give the plaster a hard, smooth surface and prevent details from chipping and crumbling.

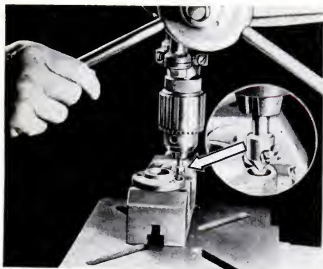
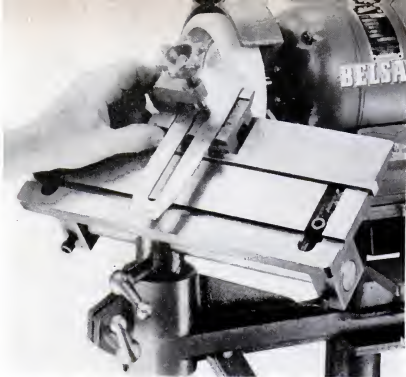
To make a duplicate lathe turning, you can use a cast to lay out the initial cuts, then keep fitting it to the work until the two shapes mate perfectly. If you want to make full-size drawings or other templates, you can also use the cast as a drawing guide, tracing the contours with a pencil. The templates can be stored indefinitely and will not become worn or dog-eared as cardboard may.—J. M. Finn, Pittstown, N. J.



HARDENED PLASTER becomes a permanent template, tougher than cardboard, for accurate checking of contours.

New Tools

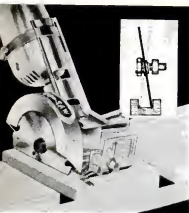
1. Sharpener Handles Wide Range of Tools. Work table and tool guides are part of a universal sharpener for workshop, garden and household tools. The 6"-by-14" table adjusts to various angles and heights. A ½-hp. double-end motor, grinding wheel and floor stand are included with the unit.



2. Countersink Ejects Chips. This countersink clears its own waste through a hole in the cutting edge, thus eliminating chatter and speeding the cut. It is made for Nos. 5, 6, 8 and 10 screws. Larger sizes, ranging from ¼" to ½", are available on special order.



3. Level Combined in Square. You can use this tool as a square or level or as both at the same time. A slotted blade slides along rivets on the I-beam to form a square, or it can be set at a 45° angle. A wing nut adjustment locks the blade in either position.



4. Dado Blade Fits Electric-Drill Unit.

This saw attachment for a ½" electric drill cuts grooves up to ½" wide and 1" deep. A setscrew adjusts blade wobble and thus controls the cut. You remove an insert in the arbor to use the blade for ordinary cutting.



5. Hacksaw Blade Is Double-Edged. You need only turn this blade to cut either thick or thin metals. One edge with 18 teeth to the inch cuts bolts, pipe and rod; the other edge with 24 teeth, cuts tubing and conduit.

Further information about the new tools shown on this page can be obtained from: 1. Belsaw Machinery Co., 315 Westport Rd., Kansas City 11, Mo.; 2. Raymac, 15490 Dale Ave., Detroit 23; 3. Mackinburg-Duncan Co., Box 1197, Oklahoma City, Okla.; 4. Arrow Metal Products Co., 140 W. Broadway, New York City 13; 5. G. W. Griffin Co., Franklin, N. H.

**You can get more
from your table saw by**

Learning to Use a Molding Head



CHOOSE YOUR SHAPE. All these fit into one molding head (shown in foreground), and head mounts on saw in place of regular blade. Cutters lock into three slots around rim of head.

By R. J. De Cristoforo

IF YOU have a table saw, you should add a molding head. This accessory is not difficult to use. With an assortment of cutters, you can create many standard or original molding designs. You can also form edge joints, cabinet-door lips and accomplish other operations normally requiring a shaper.

There are many kinds of molding cutters on the market, but they all work the same way on a table saw. The knives, usually sold in sets of three, are locked into slots around the edge of the head. The head is mounted on the saw's arbor between washers in the same way as a blade or dado cutter.

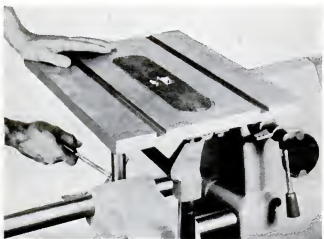
You can start your collection of knives with a few basic types, then add new ones as you need them. There are combination blades that permit different cuts depending on which part of the contour



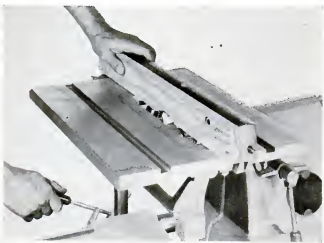
How to set up your saw to cut quick and accurate shapes



MOLDING KNIVES average about 1" wide so that you need to replace regular saw-blade insert with a dado insert like this. Always make sure that knives clear the slot before starting.



FOR EXTRA-WIDE CUTTERS, make your own inserts from thin hardboard or plywood. Screw them down, then slowly raise blades from below so that they cut their own slots to exact size.



BOLT PLYWOOD FACING to rip fence to clear the cutters, with counterbored heads on blade side and wing nuts on other. If fence has no holes, you can clamp wood strips around it

you use. With these, you can shape table edges, make your own moldings and do many other decorative jobs.

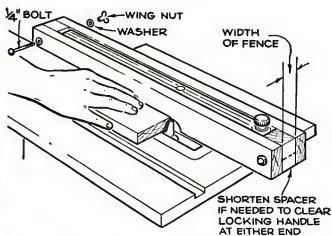
Standard cutters are each designed to do a specific job and usually require using the full contour of the blade. These cut shaped edges for window sash, glue joints, door lips and panel-door inserts. If you are uncertain which ones to choose, buy *one* set and ask for a profile sheet that illustrates the others.

Unlike a saw blade, which removes a small amount of material, a molding cutter takes a big bite. Never force the work through the blade or try to cut too deeply.

On very deep cuts, make several passes, adjusting the height of the knife after each one, to attain the full depth of cut required. If the machine stalls, vibrates, makes it hard to hold the work steady, or throws out chunks of wood instead of fine shavings, you are trying to cut too heavily.

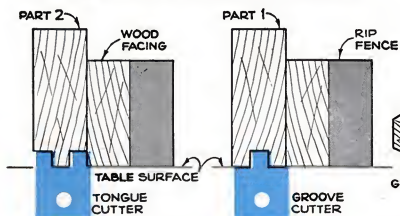
Molding heads function efficiently at the same speed required by a regular saw blade. Slowing them up or increasing their speed in any way may be dangerous. Be sure to read the manufacturer's literature provided with your molding head for any special instructions.

Right after use, clean the knives of gum and dirt and coat them with oil to prevent rust. Store them so that the cutting edges will be protected from nicks. The head itself should also be cleaned, especially the slots in which the knives

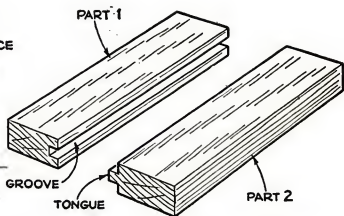


(sketch at right above). To cut the semi-circular recess, slowly lower wood facing over a head fitted with straight-edge cutters. Be sure that knives clear rip fence.

Using tongue-and-groove cutters

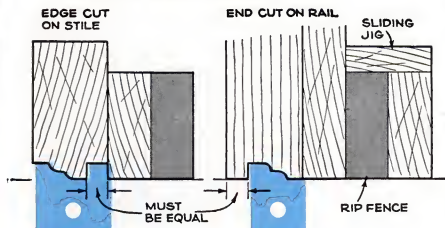


LOCK WOOD FENCE flush with edge of cutter and run first pieces through. To set up mating cutter, make tests on scrap to be sure that



tongues and grooves line up. On wood thicker than width of blade, center stock for first pass, then rip off shoulders left on tongue.

Using a sash cutter



SASH CUTTER rabbets one side to take glass and puts a decorative edge on the other. To join pieces, cope cut is made in ends of cross rails with reverse-contour blade to mate with vertical stile. Jig at right slides over rip fence for making successive passes on rail-end cuts.

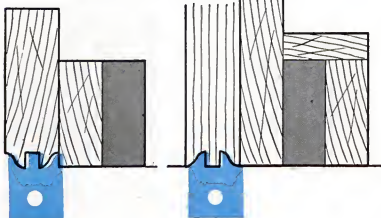


Using panel-insert cutters

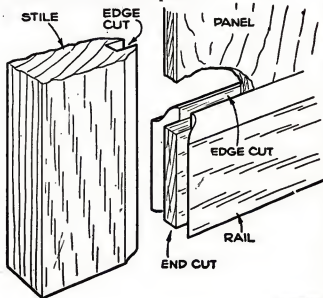
INSERTING PANELS in cabinet doors is easy with these mating blades. One at left makes groove for insert, one at right the matching cope cut

EDGE CUT ON STILE

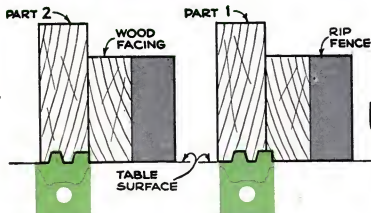
END CUT ON RAIL



on the end of the rail. Note how pieces meet at corners, forming a miter-like joint. Use jig above to make the rail-end cope cut.

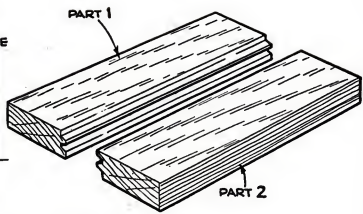


Using a glue-joint cutter

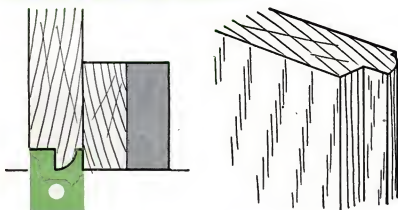


SINGLE CUTTER makes matching grooves for edge-gluing boards. On stock of same width as cutter (usually 1"), both mating pieces can be run through on the same setup, then one of

them flopped over to fit together. On thinner stock, make first cut by lining up board with *inner* edge of blade. Then cut mating piece by lining it up with the *outer* edge of blade.



Using a door-lip cutter



MOST DOOR-LIP CUTTERS are designed to leave a slight shoulder on the face of the door. If you don't care for this, shift the rip fence so that the shoulder-cutting portion of the blade is hidden under the wood facing. Curve of lip will then come flush with face of door. On stock thicker than blade, cut the lip as usual, then rip off remaining stock to complete the rabbet. If you rabbet the door all around, make the cross-grain cuts first so that any splintering at the corners will be cleaned off by the rip cuts.

fit. Never leave knives locked in the molding head.

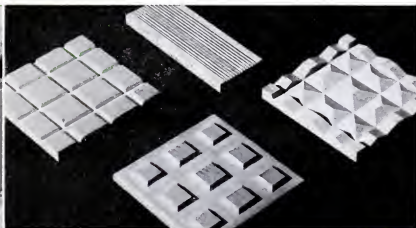
Remember, no matter how good your equipment is, cuts won't be good unless the setups that you make are accurate. So spend a few extra seconds to check

such things as knife height and rip-fence settings. Make trial cuts in scrap wood *before* cutting actual parts. This is especially important when you're using matching pairs of cutters, such as for window sash, panel inserts or tongue-and-

These tricks help you make special shapes*

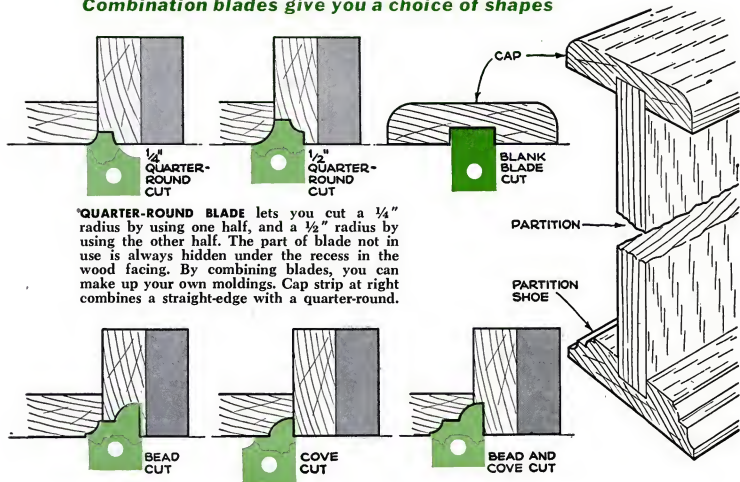


BY TILTING SAW TABLE, or arbor, you can make pyramid patterns and raised-panel designs like the one at far right in right-hand photo. Other designs at right are made with criss-cross and



parallel cuts on a flat table. Combination pusher and hold-down block (at left) has cleat at rear edge that hooks over work so that you can keep your fingers clear of the blades.

Combination blades give you a choice of shapes



QUARTER-ROUND BLADE lets you cut a $\frac{1}{4}$ " radius by using one half, and a $\frac{1}{2}$ " radius by using the other half. The part of blade not in use is always hidden under the recess in the wood facing. By combining blades, you can make up your own moldings. Cap strip at right combines a straight-edge with a quarter-round.

BEAD-AND-COVE BLADE cuts a convex shape when you conceal the tall half under the fence facing, as at left above. At center, you get a concave cut by shifting the fence out of the

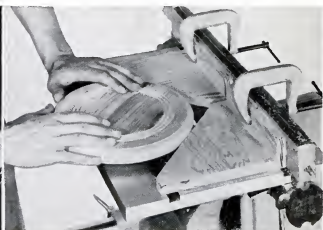
way and lowering the blade to use upper cutting half. In middle position at right, full blade is used to give a decorative edge, such as for a table or the partition shoe shown here.

groove joints. The mating cutters must line up perfectly or the joints will be spoiled. If the fit is tricky and you're in doubt, it's best to make the cuts on slightly thicker stock, join them, then trim off the excess wood.

It's also an excellent idea to cut the full profile shape of each knife as soon as you buy it and to "file" it for reference. Then you can easily tell, without practice cuts, what knife, or what part of the knife, you need. **END**



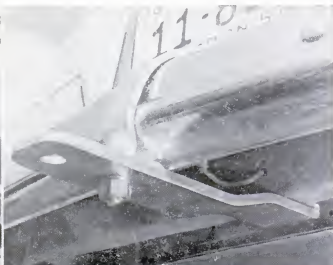
TO SHOW WHAT YOU CAN DO, all of the shapes above were made with a single cutter, the combination $\frac{1}{4}$ "-and- $\frac{1}{2}$ " quarter-round. Trial cuts on scrap will help you get shapes that you want.



SHAPE CIRCULAR PIECES by clamping two 45° triangular blocks to fence to form V. Feed work into V until it rests firmly, then turn disk slowly against the rotation of the blades.



A CLEVIS PIN, locked on by a cotter pin, holds the trailer tongue to the hitch. A safety chain hooked from the car to the trailer is advisable.



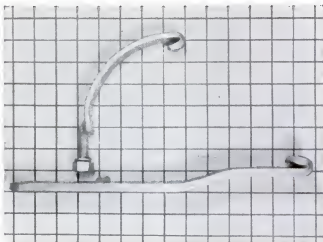
LOWER MEMBER of the hitch hooks to the rear cross channel of frame, upper one to bumper. Turning up the nut shown attaches the hitch.

On-Off Trailer Hitch Clamps in Place

Do you need a trailer hitch on your car just once in a while? Do you dislike having a permanent fixture hanging on the rear bumper?

Here, then, is the hitch for you. It goes on or off the car in less than a minute. Even so, you need not shy at heavy loads since it pulls from the frame of the car—not just from the bumper.

The bottom member was formed from a 15' piece of $\frac{3}{8}$ "-by-2 $\frac{1}{2}$ " mild steel, the supporting strap from an 8 $\frac{3}{4}$ " piece of $\frac{1}{4}$ "-by-1 $\frac{1}{2}$ " mild steel. A bolt with its head removed was welded to the lower end of the latter member. A small steel rib was also welded to the top surface of the bottom member. When the hitch is in place,



A BACKGROUND OF 1" SQUARES shows the dimensions of the parts, made to suit a 1954 Ford.

the rib rests against the outer edge of the bumper and keeps the hitch from sliding forward on a sudden stop.—Ken Hadenfeldt, Storm Lake, Iowa.

This Draining Rig Gets All of the Oil from Those "Empty" Cans

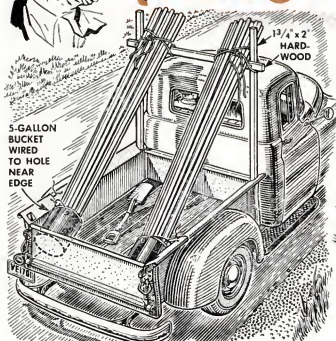


A SMALL amount of motor oil always remains in the tin containers after make-up oil has been added at a service station. In time, these drops can add up to a gallon of oil.

And it doesn't take long, either, as John Schmidt of Townsend, Mont., has discovered. He saves the drops with this simple rig. A length of eaves trough was set at a slant in notches in upright boards. When an empty is placed at the bottom of the line, the upper can is shoved off the rack and drops into a box for disposal. Oil drains into a gallon can at the lower end of the trough.



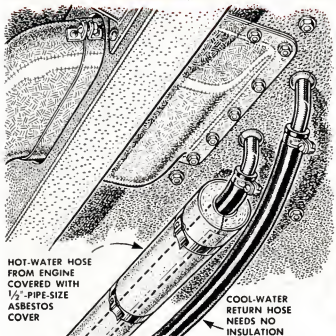
Hints FROM THE MODEL GARAGE



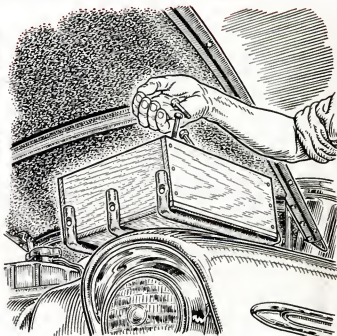
Carrying long pieces of pipe in a pickup truck is easy when you do it this way. Install empty pails in the rear corners of the truck bed to serve as quivers for the ends of the pipe lengths. Be careful if you should come to an underpass that's a bit low.



There ought to be a law against service-station attendants who slam a hood shut. Engineers say that hoods were designed to close with gentle pressure. If slamming is required, previous slamming may have damaged the latch or warped the hood itself.



An underseat heater may lose heat from a long supply line. If you have this type of heater, better check to see whether you can do something about insulating the line. Applying the snap-on type of insulation used in houses will do the trick very effectively.



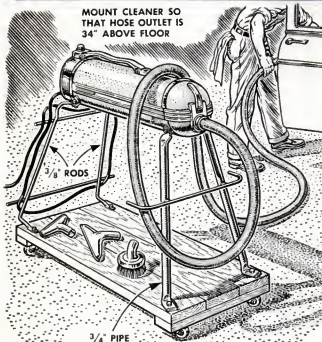
Two-tone parts boxes are not yet a necessity in a service garage. But one operator says that frequent replacement of gritty old boxes with new, clean ones pays off. Soft rubber on the bottoms protects fenders. Parts are cleaned before they're put back.

Please turn the page for more auto hints

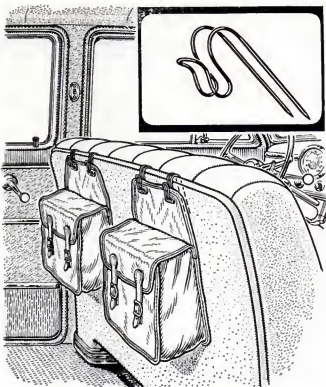
FEBRUARY 1956 189

MORE Hints from the Model Garage

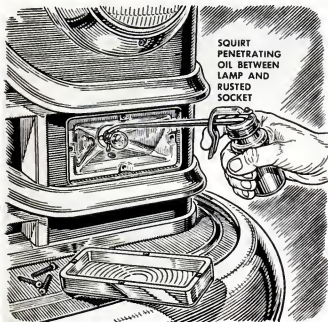
MOUNT CLEANER SO THAT HOSE OUTLET IS 34" ABOVE FLOOR



A vacuum cleaner mounted on a rolling stand like this makes it easier to clean car interiors in a service station. Dragging on the floor is eliminated and the cleaner is kept out of grease and dirt. A more effective hose length is achieved since the cleaner is at cushion height and follows easily as the cleaning job progresses.

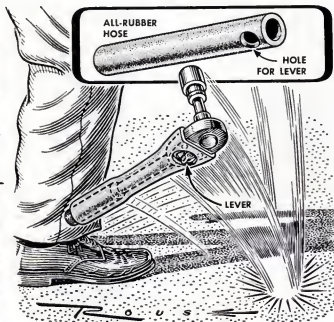


A pair of bicycle saddlebags mounted like this will add a lot of useful storage space to a sedan. The bags look good, too. Form a pair of supporting pins for each bag from 1/16" piano wire and sharpen the points. Just push the pins down into the upholstery. The bags can be lifted off the hooks and used as carriers if desired.



SQUIRT PENETRATING OIL BETWEEN LAMP AND RUSTED SOCKET

Squirt penetrating oil around a tail-light or parking-light bulb that you find rusted fast to its socket shell. Otherwise, you run the chance of damaging the socket. Coat the socket and the new bulb with oil so that removal next time will be fast and easy.



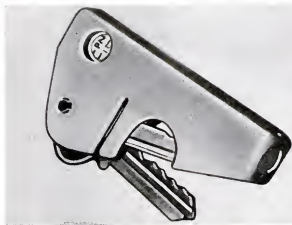
Dropping a ratchet onto a cement floor, when the tool is being used with a socket set under a car, is a common occurrence. Often the small lever is snapped off. As a safeguard, one mechanic slipped a piece of rubber hose over the wrench, like this.



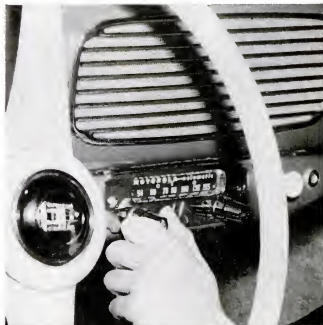
New for Your Car

1. Trunk Lamp Reels Out. This mercury-switch lamp is a trunk light (top left) that can be reeled out as a trouble light (bottom) for fixing tires or making other roadside repairs. The accessory, designed for 1956 Pontiacs, has a 17' extension cord. It lights only when placed in a horizontal position.

Further information on these new car products can be obtained from: 1. General Motors Corp., Detroit, Mich.; 2. Gift Horizons, 475 Fifth Ave., New York City 17; 3. Motorola, Inc., 4545 W. Augusta Blvd., Chicago 51, Ill.; 4. The Ettinger Mfg. Co., 1319 S. Michigan Ave., Chicago 5, Ill.



2. Air Gauge Set in Key Case. This case will hold your car keys and also check the air in your tires. It has a molded-in air gauge that registers pressure in a small window. The case holds three keys.



3. New Radio Fits Volkswagen Dash. A six-tube radio with a separate 6"-by-9" speaker is being manufactured in this country for installation in Volkswagens and some other foreign cars. The faceplate is designed to match the VW's interior decor.

4. Crash Pillow Sticks on Dashboard. A safety pillow helps to protect a front-seat passenger who may be thrown against the dashboard in an accident or sudden stop. Suction-cup buttons hold it in place.

Wood Holder Guards Welding Tips

WELDING-TORCH tips will be protected in a holder made of a block of hardwood. Drive a line of finishing nails near one end of the block; then measure off holes for the tip orifices and drill the holes into the wood at an angle.—*M. C. Anderson, San Lorenzo, Calif.*



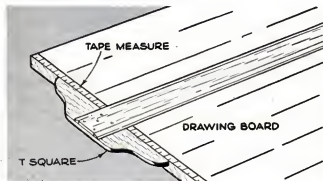
Newspaper Keeps Lathe Clean

BEFORE you start a lathe job, slip newspaper under the bed to catch dust and shavings. When the job is finished, brush off the ways and pull the paper out from under the bed.—*Harrison Neustadt, NYC.*



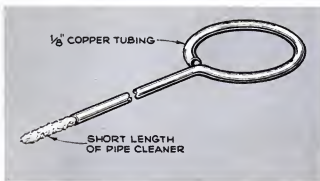
Spool Holds Extension Cord

You won't knot an extension cord if you wind it on an H-shaped plywood spool when you put it away. Notch the legs of the spool to take the cord ends wherever they come.—*W. G. Tilsher, San Gabriel, Calif.*



Tape Measures Off Ruled Lines

A CLOTH measuring tape tacked to one edge of a drawing board will be helpful when you lay out horizontal ruled lines. Use it with an intersecting T square for spacing.—*David E. Holt, Columbus, Ohio.*



Pipe Cleaner Makes Flux Brush

A SHORT length of pipe cleaner inserted in $\frac{1}{8}$ " copper tubing is a handy, disposable brush for applying acid flux to soldering work. Bend the tubing at one end to provide a loop for hanging it up.

Which Woodworking Square?



FRAMING SQUARE

All these straightedges have an angle. One or more of them may be just the ticket for your job.



MITER SQUARE

ONE of the four common woodworking squares undoubtedly hangs over your workbench. But is it the right one for the jobs that you usually do?

Before you decide, let's consider all the time-saving chores that you can do with a try, miter, combination or steel square:

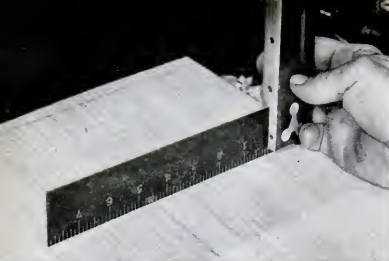
Try square. One of the most familiar of all tools, this one enables you to scribe a square cut on a board, check its surface for warping, and test right-angle corners or joints. It usually comes in four sizes—ranging from 6" to 12". Blades are marked on both sides in $\frac{1}{8}$ " divisions.

Miter square. This is a close relative of the try square. A 45°



COMBINATION SQUARE

TRY SQUARE



Using the Try Square

USED AS A STRAIGHTEDGE, a square detects warping. Press edge of blade firmly against the surface. A sliver of light showing between blade and board indicates a curve in the wood.



TESTING CORNERS, like marking and checking right-angle cuts, is a job that can be done with any square. The try square does little more, but is easy to use, compact, and low priced. You can check the squareness of board edges (above), or press the handle against an edge and test a right-angle cut at the end of a board.

Using the Miter Square

45° SLOPE on the handle of a miter square adds mitering to the tricks that you can do with a try square. The combination square has a similar slope on the handle for marking miter cuts.



slope on the blade end of the handle, instead of a right angle, is the only difference. You can slide it along the edge of a board and mark off miter cuts, or check those already made. Like any straightedge, the miter square will detect warping. Sizes and markings are like those of the try square.

Combination square. This jack-of-all-jobs will square and miter or will double as a marking gauge, depth gauge, level, plumb or straightedge. Blades usually come 9" or 12" long, with their edges divided into $\frac{1}{8}$ ", $\frac{1}{16}$ ", or $\frac{1}{32}$ " intervals. The more expensive machinist's jobs come in a 4" to 24" range and are made to more exacting standards for metalworking. You can use them for woodworking, too.

Steel square. This is a big one—made for big jobs. A 24" body and 16" tongue handle layout and checking on the heaviest lumber. If you tackle a garage roof or a house gable, the rafter version will do most of your arithmetic, too. Tables on the face simplify marking length and angles of cut for each kind of rafter in a variety of roof styles.

Other tables on this square help you work out board feet measurements, lay out eight-sided figures, and size common braces. There are simpler versions, called carpenter's squares, that omit the rafter tables—and cost less. You can get almost any combination of tables you might

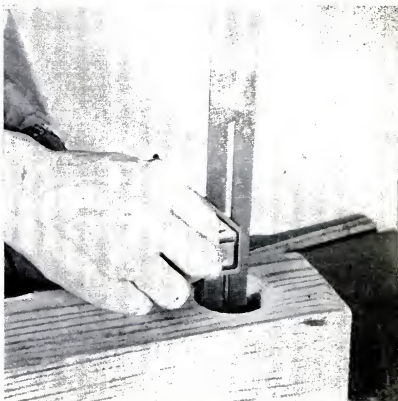
Using the Combination Square

AS A MARKING GAUGE, a combination square will easily mark even long boards to width. Set the adjustable handle, then hold a pencil against the blade end as you slide the square along the edge of the board.



CHECK RIGHT-ANGLE JOINTS with a combination square by setting the handle at one end of the blade. Light showing between blade and board indicates that this joint is out of square.

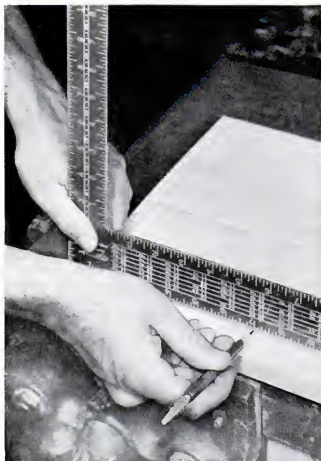
MARKING PLUMB LINES on a wall, plumbing studs and leveling an auger bit for horizontal drilling are jobs for a combination square. A level in the handle makes them possible.



GAUGE HOLE DEPTH by resting the blade end on the bottom and sliding the handle down until flush with top of hole. You can then read its depth directly from the blade markings.



Using the Framing Square

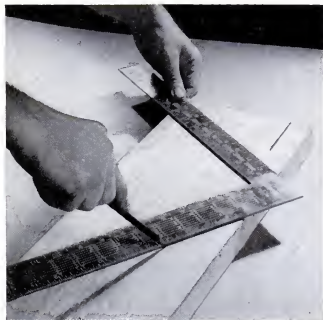


LAY OUT BIG BOARDS with a steel square. For accuracy, hold the square on edge and pencil right next to the markings. Start measuring from the 1" mark, as corner may be worn round.

DIVIDE A BOARD into equal strips by inclining a square, or straightedge, at an angle to include

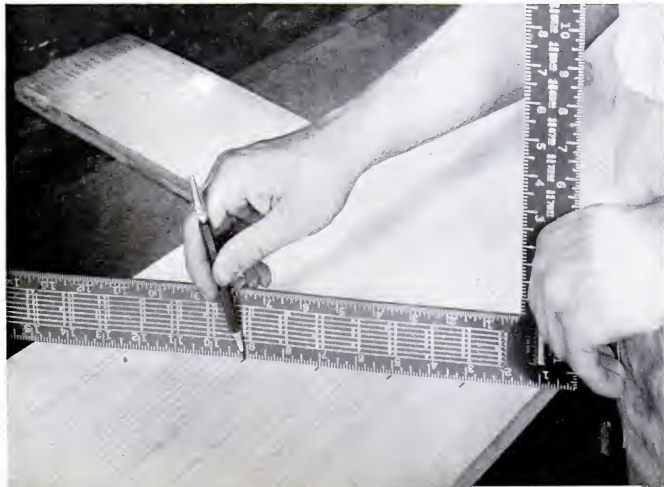
want on a steel square. Adding a square or two to your tool collection is not a big investment. All but the large steel squares cost less than \$5. The fanciest steel square costs less than \$10.

The cost of wood spoiled on a single fair-sized job can top the cost of any good square. Having the right one *could* save you money.—*Edwin M. Love.*



ROOF RAFTERS are laid out with a rafter square and very little arithmetic. Tables give length of common, hip and valley, and jack rafters. Square also marks the proper end cuts.

as many equal divisions between the edges as you want. Then mark and gauge them. **END**



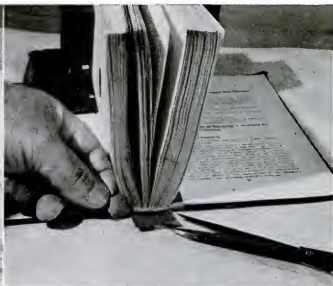
4 Steps in Renewing a Book Cover

THE more useful a book is, the faster it shows symptoms of old age: torn back, bent corners, scuffed edges. To give an old favorite new life, buy a roll

of cloth adhesive tape at a stationery store. Choose a width that will cover the back of the book and extend at least $\frac{1}{2}$ " onto each cover. Use it as below.



1 CENTER THE BACK of the book on a strip of tape that overlaps it $\frac{3}{4}$ " at each end. Roll it on lightly to simplify later steps. Trim frayed threads off first to make a neater job.



2 MAKE TWO CUTS in the end pieces. Press one outside strip in place. Then fold the center strip inside the back, on itself. Finally, press the other outside strip onto the cover.



3 CREASE HINGES like this. Smooth edges of tape with your thumb where creasing pulls it loose. Smooth the back on firmly now, too.



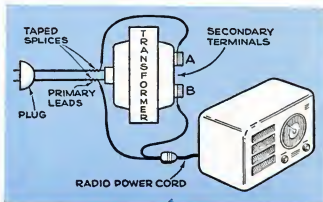
4 CUT CORNER GUARDS by halving squares of tape. Press on a triangle to overlap a corner by $\frac{1}{2}$ ". Make two cuts, each in line with an edge of the book cover and to within $\frac{1}{8}$ " of it. Fold center flap first.

How to Boost Radio Reception

WHERE line voltage is low, you may be able to improve radio reception with a filament or doorbell transformer.

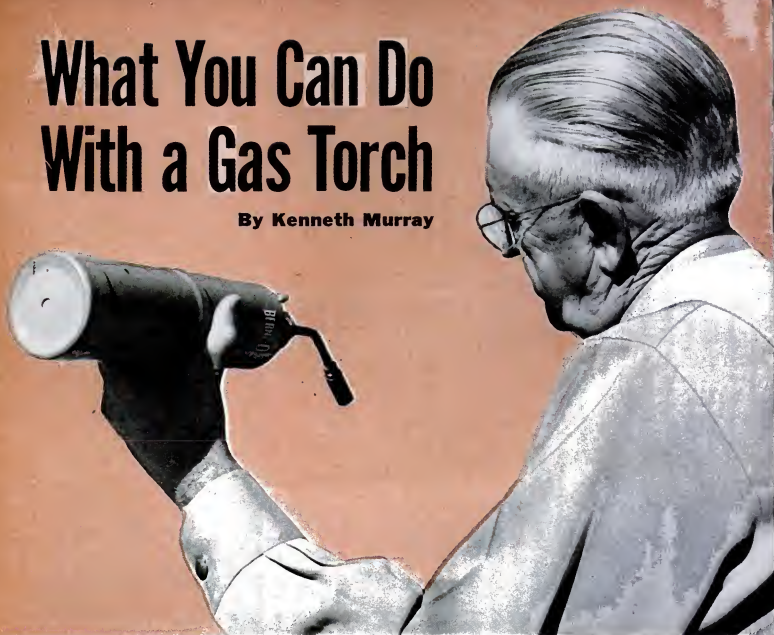
Connect the transformer in the line as shown in the diagram at the right. Then try it. If voltage is decreased instead of being boosted, reverse the connections A and B.

Do not use this circuit for hi-fi outfits, TV sets or other appliances which draw more than the rated transformer wattage.



What You Can Do With a Gas Torch

By Kenneth Murray



ABOUT the only problem when you use a gas torch is figuring out what it *can't* do. These small, inexpensive propane burners will handle a range of chores extending from heavy soldering to some of the oddest odd jobs that you'll ever find around your home.

The torches are self-contained and self-pressurized, so there's no pumping or priming to fuss with. They are available at hardware stores for about \$5 to \$7. To fire one up, you turn a knob and light a match. When one tank is empty, you throw it away and hook on a refill that costs about \$2.

Two standard burner tips give you a broad flame for general heating or a

slim pencil point for fine work. You can also buy accessory tips or make up your own to do many special jobs.

By regulating the torch's fuel flow, you can adjust the flame temperature from a mild "stand-by" heat to a torrid 2,300 degrees. It will take on easily such high-temperature jobs as brazing and silver soldering.

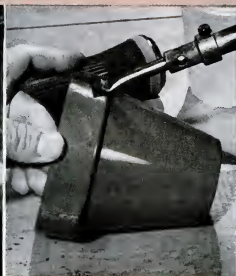
Handy on picnics. A torch is safe to carry along with you in your car, if you are careful to keep the fuel valve tightly closed. It will quickly start picnic fires when the wood is wet, cook food, and help you to make roadside repairs.

If your blacktop driveway kicks up a hole, just heat the dislodged material

Special burner tips that you can make



CUTTER BLADE slices easily through plastic and asphalt tile. File down a short length of $\frac{3}{8}$ " brass or copper tubing to a push fit in the soldering-tip holder. Flatten tip in a vise and file to a knife edge.

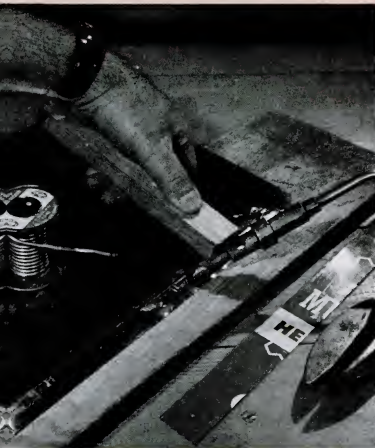


SPREADER TIP is made of tubing in same way as knife blade at left. Bend a small flat portion on the end and you can "iron" together cracks in toys and utensils that are made of heat-softened thermoplastic.



FOR VERY FINE SOLDERING, as in repairing delicate jewelry, try an oil-can spout fitted into an ordinary burner. To remove the spout from the screw ring, heat until solder runs, then push the spout out free.

These are special tips that you can buy



SOLDERING TIP speeds work on large metal areas, like this dustpan, that tend to diffuse heat from ordinary irons so that the solder doesn't flow evenly. Soldering this thin strip on the pan's edge to make it sweep up dirt better is easily done by adjusting the torch's fuel flow so that it gives intense heat.



FLAME SPREADER heats broad areas, like the backs of these asphalt tiles. Soften tiles slightly before installation and they will lie flatter. To remove a worn or broken one, warm the face to loosen the adhesive and you can then pry it off easily. If the tile has lifted or buckled, heat the surface and press it back in place.

A gas torch does many chores around the home



OLD GLAZING PUTTY peels off neatly with blade if you soften it first. Keep the pencil flame aimed directly at the bead, away from the glass and wood, and move it along steadily. The clean, dry surface that's left is easy to put fresh putty on.



HEAT CALKING GUN until it's warm to the touch, and the compound will flow more easily, especially outdoors in cold weather. The soft calking will penetrate fine cracks better, then stiffen up quickly as soon as it cools on the work.

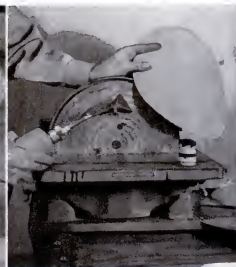


DENTS IN FURNITURE can be removed with the homemade spreader, a flattened $\frac{3}{8}$ " tube inserted in the soldering holder. Iron a moist piece of cotton flannel over the dent until it sizzles. The steam will swell the wood fibers back to normal.

Use it for these unusual jobs in your shop



SMALL PARTS to be brazed or silver-soldered can be held between two angle plates in a C clamp. To mend a bandsaw blade, bevel ends, insert piece of silver solder between, and heat them. When solder flows, clamp with preheated pliers.



STICK ADHESIVE used to fasten sanding disks to a wheel will flow on smoothly without lumps if you first warm the metal plate with the torch's flame spreader. Use it also to heat worn disks so that you will be able to peel them off easily.



YOU CAN BEND thin pieces of wood this way without a costly steam chamber. Wrap the wood strips with soaking-wet cloth and play the flame on the cloth to produce steam. Slowly bend to the desired shape, and then clamp the pieces in place.



For your car, too

YOU CAN CLEAN SPARK PLUGS quickly by burning off the carbon deposits first. Use the concentrated pencil-flame burner aimed at the electrodes. When the parts turn a grayish color, scrub off the ash with a wire brush. Keep the flame away from porcelain parts, which may crack under the heat.



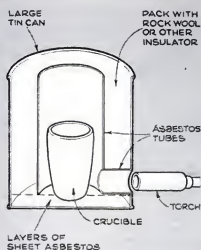
YOU CAN BAKE OUTDOORS at home or on camping trips with this \$3 portable oven and torch setup. Block the oven up on bricks or stones and prop the torch with wire or rocks so that it can't roll. For the best heat, use the flame-spreader accessory and direct it at the deflector plate on the bottom of the oven. Put a piece of asbestos sheet over the table.



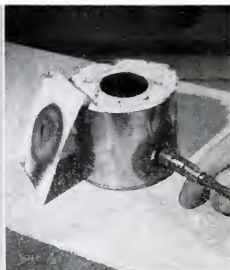
WHEN HOUSE LIGHTS GO OUT, or on a camping trip, try this for emergency illumination. Tie a 12-cent Coleman Grade A mantle over the pencil-flame burner and burn it off with a match before lighting the torch. It will give you about 200 foot-candles of light—enough for a small room. Be sure to place it out of children's reach and where it can't tip over.



CHARRING WOOD for a novel decorative finish is done quickly and evenly with the flame-spreader attachment. To leave unburned designs, paste on templates cut from asbestos sheet. Use clear varnish or lacquer for a high-luster finish.



TIN-CAN FURNACE lets you melt and alloy small quantities of brass, bronze, copper, aluminum and other metals without expensive equipment. Use a wide, squat can, like those that coffee or shortening come in, and line the bottom with several layers of asbestos sheet, as shown in the sketch. Run a short asbestos tube through the side of the can, just large enough to let you slip in the torch's burner. Adjust the tip so that it just enters the larger-diameter tube set vertically inside the can.



and tamp it back in. If you need to split stone, heat a line around the break point, whack it with a sledge hammer, and the pieces will part neatly.

Safety rules. The main thing to remember is that you are working with fire—and hot fire at that. Never put a burning torch where it can be touched,

tipped or tripped over by children or others. And never leave a burning torch—shut it off and place the still-hot burner where it can't be reached until you return. If you prop it up, make sure that it can't slip. If you work close to wood or other flammable materials, slip a sheet of asbestos in between for protection. **END**



Stepladder Helps Drill Long Piece

A STEPLADDER will support the end of long work in the drill press. Using a level on the work, raise or lower the drill press table until it is even with the ladder step.



Pipe Cleaner Anchors Screw

RESET a wood screw by plugging the oversize hole with a glue-coated pipe cleaner. Insert the cleaner and clip it flush with the hole. If necessary, use more than one.

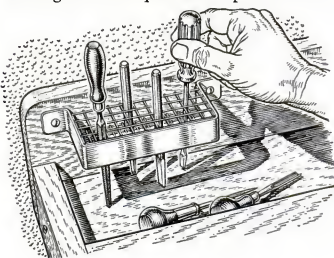
Hardware Cloth Holds Tools

SMALL tools can be kept handy in a rack like this on the backboard of a workbench. Bend the frame from an inch-wide strip of 18-gauge sheet metal. Cut two pieces of $\frac{3}{8}$ "- or $\frac{1}{2}$ "-mesh hardware cloth. Solder one to the top edge and one to the bottom of the frame, making sure that the meshes match.

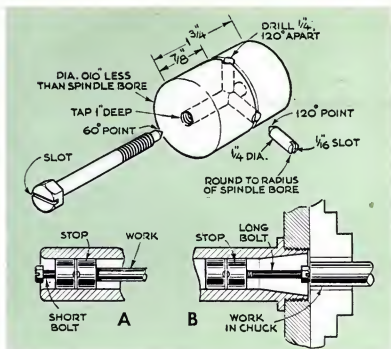


Soldering Iron Carries Rest

A SQUARE of asbestos cemented on the shank of a soldering iron will let you rest the hot iron on any surface. Tape or shellac the edges of the square to keep them stiff.



NEW Shop Ideas



Stop Locates Lathe Work. This spindle stop will locate successive workpieces all exactly alike in the lathe. It can be locked at either the nose or the outboard end in a matter of seconds.

Turn and groove a 1 1/2" length of bar stock as in the drawing. Tap a 1/4" or 3/8" hole drilled 1" deep from one end. Use the chuck jaws to scribe three lines 120° apart across the turned groove.

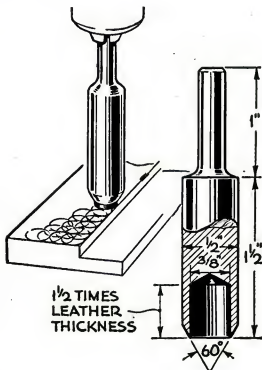
Drill three 1/8" radial holes at these locations through to the tapped hole. From 1/8" drill rod, make three pins as in the drawing. Bend a ring of piano wire into a circle

to fit tightly into the groove and the pin slots. Snap it on to retain the pins when the stop is not in the lathe spindle.

On the threaded end of a cap screw that fits the tapped hole, turn or grind a 60° point. Slot the head to fit a big screwdriver. Tightening the bolt will force the pins out against the spindle wall. Use a short bolt for locking the stop in the outer end to suit long work as at A. For short work, use a bolt long enough to permit seating the stop where the spindle bore becomes parallel back of the taper, as at B in the drawing.—*Phil McCafferty, Stanwood, Iowa.*

Tool for Engine Finish. This spotting tool cuts its own leather pads from old machine belts or shoe-repair scraps. Turn it from drill rod, bore the big end, and turn the 60° angle to form a sharp edge.

Place the leather on a wooden surface. Using the tool as a punch, cut out a leather disk. Pick it out and cut another. Leaving this in, push the first one back; it will project about halfway. Apply medium lapping compound sparingly to the work. Spot in a straight line, overlapping each spot half its diameter. Rinse in kerosene.—*Randolph Lucas, Richmond, Va.*



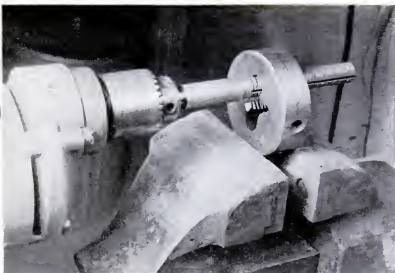
How to Renew Knurling Tools. When packed with metal particles, knurling tools cannot produce good knurls. Soak in lacquer thinner for half an hour and brush or blow them clean. Re-oil before use.—*C. H. Hubachek, East Haven, Conn.*

MORE SHOP TIPS

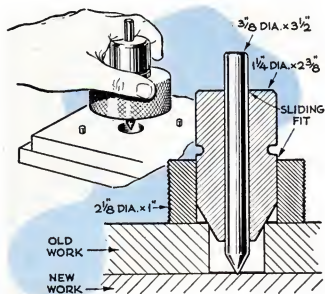


How to Resharpen Dies. Worn button dies can be reconditioned with a lap turned in an electric drill. Either a standard adjustable-sleeve lap or a homemade one can be used.

For the latter, turn brass, copper or soft steel to the size of the chip-clearance holes in the dies. Form helical grooves by cutting



coarse-pitch right- and left-hand screw threads in the lathe. Then split the lap lengthwise. Spring the ends apart to a tight fit. Charge heavily with rather coarse compound. Work the lap back and forth as it turns in the die. When finished, wash the die in kerosene or fuel oil to remove all compound.—*H. J. Gerber, Stillwater, Okla.*

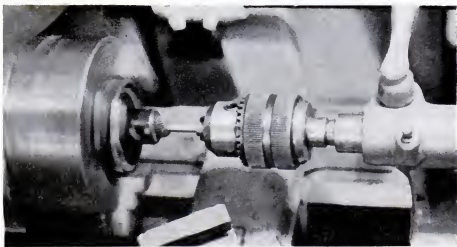


Punch Transfers Holes. Laying out centers from holes is easily and accurately done with this transfer punch. The tapered body is set into the hole, the collar slid down onto the surrounding surface, and the punch struck. Its mark will be accurately centered under the hole.

Bore the collar to a good finish, and turn the body a close sliding fit in it. The outside, tapered end, and bore should all be machined at one chucking to insure concentricity. The center punch should be hardened. Dimensioned as shown, the device can be used in holes from $\frac{1}{2}$ " to $1\frac{1}{2}$ " in diameter. For smaller ones, reduce the diameter but not the length of the parts.—*C. W. Woodson, East Aurora, N. Y.*

Ball Cutter for Boring.

For increasing the bore in a gear hub to fit a $\frac{3}{8}$ " shaft, I mounted a ball cutter in the lathe as shown in the photo at right. It did the job in one pass. The tailstock must of course be accurately aligned for such a job, and the work well centered, or the cutter will bore an oversized hole.—*John Tavian, Mentone, Calif.*



Squeeze Bottle Squirts Plaster into Wall Cracks

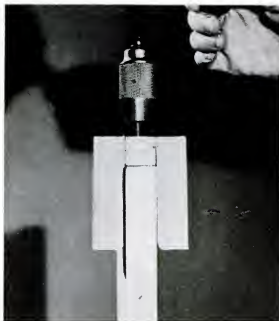
A SOFT-PLASTIC ketchup or mustard dispenser is perfect for applying small amounts of plaster or cement. Squeeze it and the pointed spout will fill cracks, wallboard joints or crevices around door and window frames. If you want to increase the flow, cut the spout down. The material can be washed out.—*E. P. Craff, Ridgewood, N.J.*

Rolling Car Mixes the Paint

THE next time you buy paint, make the stirring easier by letting your car do most of the work. Put the unopened cans in a large carton in the trunk where they can roll around as you drive. Keep them in the car until you are ready to start your painting job.—*Bill Copeland, Sarasota, Fla.*

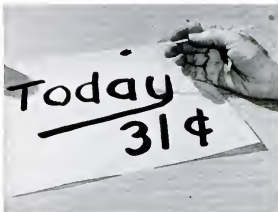


DO IT THE EASY WAY



TO KEEP THE DRILL SQUARE when making a hole in the end of a board, slip on a U-shaped guide. Make it from wood scraps.

DROP A SMALL PART? Place a flashlight on the floor. Look for the part's shadow.

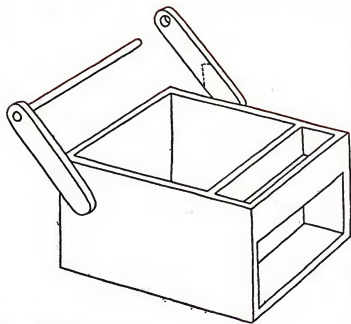
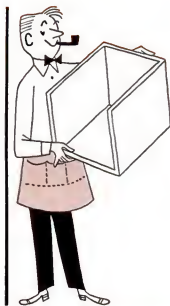
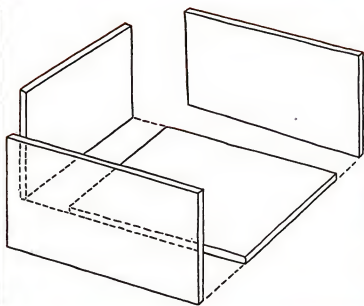


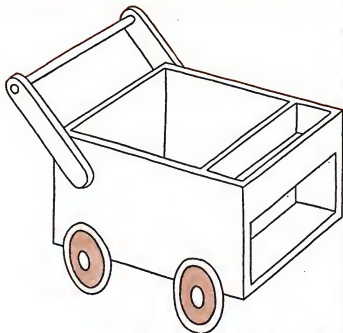
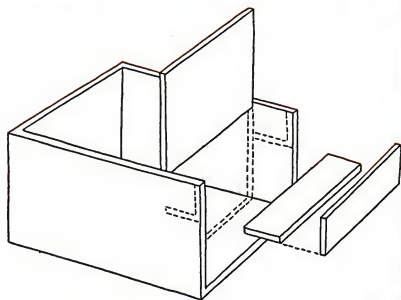
DON'T WASTE TIME cleaning a good brush if you do small lettering jobs daily. Use a cotton-tipped swab. Then discard it.

A CARPENTER'S TRICK will help you drive nails into hardwood. Lubricate them with wax crammed into a handle hole.



Wordless Workshop





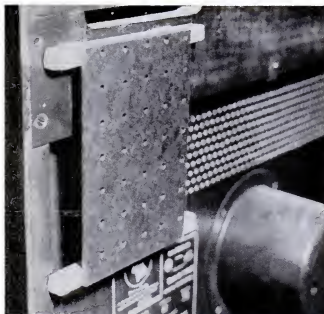
Next Month: A shelf table for the sportsman

FEBRUARY 1956 207



Remove Your Watch First

BE SURE to take off your wrist watch when you work with paint remover. Spattering will pit a plastic crystal badly—as the home handy man above discovered too late.

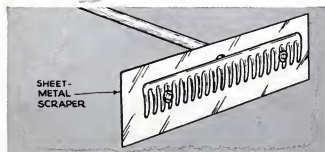


TV Slot Holds Program Notes

You can keep TV magazines in a pocket on the back of your set. Screw a piece of material such as Masonite Peg-Board to two strips of wood and glue it on. The perforated board will not cut off air.

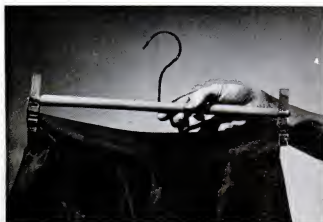
Tip on Treating a Typewriter

IF YOU store a portable typewriter in its normal writing position, its delicate parts are less likely to shift out of alignment.



Garden Rake Does Snow Duty

CONVERTED to a snow scraper, your rake becomes a year-round tool. Cut a hole in a rectangle of sheet metal and push it over the handle. Using large washers on the prongs, bolt it on.—R. E. McCune, Harvard, Mass.



Clothespin Rack Hangs Skirts

You will be a hero to the women in your family if you make a set of hangers that will keep skirts from becoming wrinkled. Cut dowels to required length, drill for hooks cut from wire hangers, and mount clothespins, driving nails through the springs.



How to make

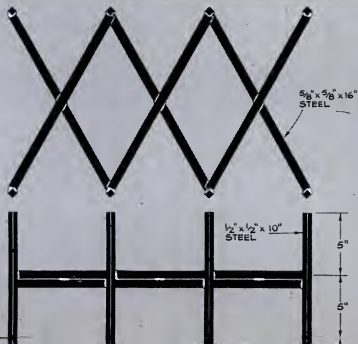
A Modern Fireplace Grate

By John Rogers

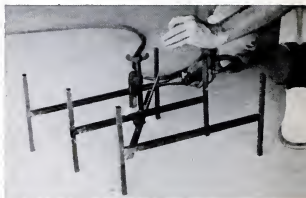
WELDING is required to make this modern fireplace grate, but you don't have to own a welding outfit. You can hacksaw the parts to length and have the rest of the job done at a local welding shop for two or three dollars.

Mild-steel bar stock is used. You need eight 10" lengths of $\frac{1}{2}$ "-by- $\frac{1}{2}$ " stock for legs, six 16" lengths of $\frac{3}{8}$ "-by- $\frac{3}{8}$ " stock for crosspieces. After the welding is completed, finish the job by giving the grate a coat of flat black paint.

SHAPED LIKE A PANTOGRAPH, the grate is designed to substitute for traditional andirons.

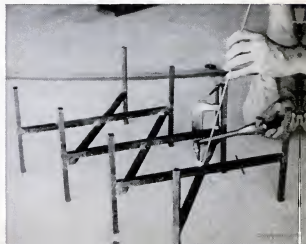


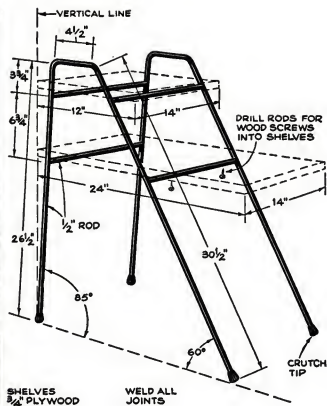
1 THREE SUB-ASSEMBLIES shaped like the letter H are welded together first. Notice how bricks are used here to hold the parts.



2 A DIAGONAL CROSSPIECE ties the three sub-assemblies together. End welds have already been made and clamps removed.

3 AS FINAL STEP, a leg and crosspiece are added to each end of grate. The pantograph-shaped assembly is now ready for painting.





Modern Table Made from Birch and Wrought Iron

HERE'S a clean-cut blend of natural wood and wrought iron that fits in well with both modern and traditional furniture. The sides of the end table are A-shaped frames bent from $\frac{1}{2}$ " steel rod. You can form the angles in a vise with a hammer, pulling on the legs for leverage.

If equipment isn't available to weld the crossbars, you can have the job done inexpensively. Welding is preferable to bolts that may permit wobble. I used $\frac{3}{4}$ " birch plywood for the shelves, trimmed at the edges by

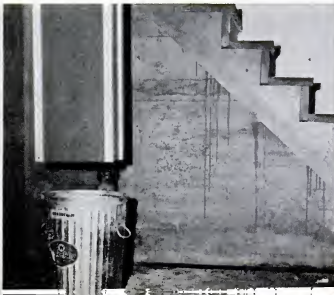
gluing on $\frac{1}{32}$ "-by- $\frac{3}{4}$ " solid-birch strips. Score the plywood heavily with a sharp knife before sawing and you'll find that the face veneer won't chip.

My favorite finish—by which I mean easy to apply—is two coats of floor sealer, buffed smooth between coats with steel wool. Brush on the second coat liberally, wait five to 10 minutes, then rub vigorously with a rag soaked in turpentine. When dry, rub to a deep luster with fine steel wool and paste wax.—*Frank E. Price, Reno, Nev.*

Hardboard Chute Carries Kitchen Trash to Basement Bin

A CHUTE leading from the kitchen to a basement trash container will save the housewife many steps. Such a chute can often be built in a stairwell as shown below. In this

case, the chute was made of tempered hardboard stiffened with 1"-by-2" wood strips at the corners. The wood door was housed in a framework of 1"-by-3" lumber.



How to Make Traverse Rods from Wood

By Edwin M. Love

TRaverse rods develop exasperating faults. My wife complained that the carrier slides snagged on the rod joints and jammed when the drapery hooks jumped out, which is often. Finally, when the draw cords of an 18-foot window broke as she tugged at them, she ordered me to fix them.

I was fed up with stretching my arms and craning my neck, trying to thread drapery hooks into carrier eyes. Repeating the cycle by installing new commercial rods did not appeal to me. Then came an inspiration. Why not build new rods in my shop? Since wood slides nicely on wood, I could make the carriers and rods of wood. I did, and my creation works like a charm. I am now convinced that it will be a long time before my spouse is irked again by balky, snagging drapes.

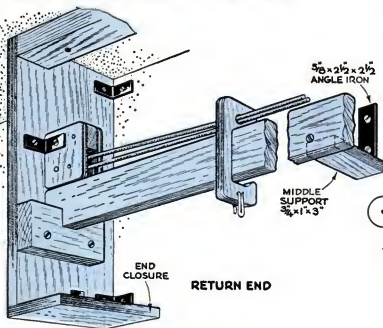
Hardware for the job consisted of small steel awning pulleys from a dime store, plus nails, screws, stove bolts, and angle irons. Plywood went into the carriers and brackets, but $\frac{3}{4}$ " hardboard was chosen for the cornice fronts because there's no grain for the paint to raise.

Building the rods involved a production run in carriers. The other work was simple

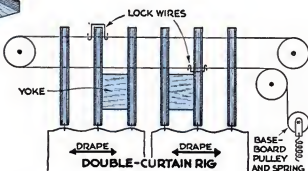


PLYWOOD CARRIERS slide smoothly along a wood bar to open and close these window drapes in the author's home. The cornice was hung from a one-by-two cleat on the ceiling.

How the traverse rods work



SINGLE OR DOUBLE CURTAINS can be installed on this homemade wooden traverse rod, the double ones meeting at, and drawing away from, the middle of the window expanse. Notice that the two carriers at the leading edge of each drape are yoked together with a wooden block and that the inner member of the double carrier is wired securely to the draw cord.



carpentry. Since my windows are high, the fronts of the cornices were hung from a ceiling cleat, the ends extending over the end brackets to hide the joints. Wooden blocks, bored and countersunk, were glued $\frac{3}{8}$ " below the upper edge of the hardboard facings, forestalling interference with the cleat. The blocks, coated

with white plastic glue, were rubbed onto the back and left to dry. Screws were then run through the blocks into the ceiling cleat.

Installation pointers to keep in mind as you work follow:

Make the carriers on a mass production basis, that is, cut all the blanks first.

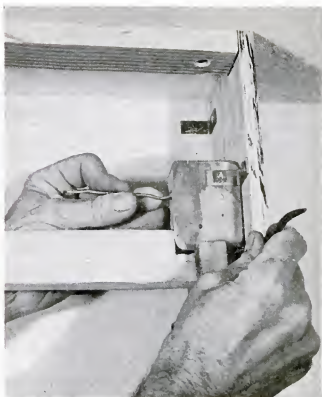
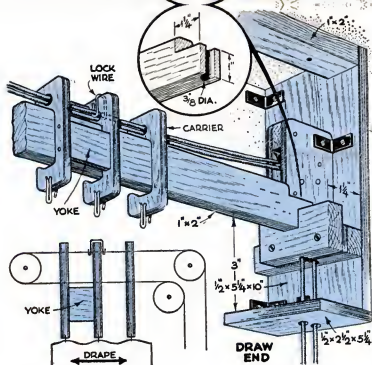
How you make the carriers



STACK SIX BLANKS in an assembling jig made by nailing two pieces of plywood to a squared piece of two-by-four. The blanks are 2"-by-3 $\frac{3}{4}$ " pieces of $\frac{1}{4}$ " plywood. Cut a tracing pattern from cardboard (or make up one carrier), drop



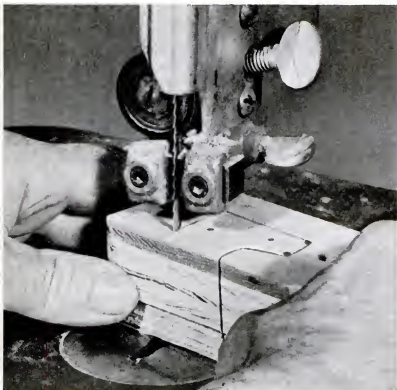
it on top of the pad of blanks and trace around it. Then, holding the pad firmly in the jig, drive two four-penny finishing nails into the center (waste) opening. Remove the pad from the jig, take it to the drill press and drill the holes



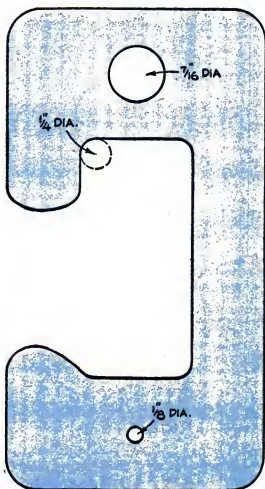
THREAD PULL CORD through the pulleys with a piece of wire solder. Tie a string to loop in solder, and tie the string to the end of cord.

Then assemble them into pads of six blanks each as shown in the photos. You then can drill all the holes of a particular size in the carrier pads at one time without changing bits.

When the carriers have been sanded, suspend each one from a wire hook and dip it into a can of shellac thinned

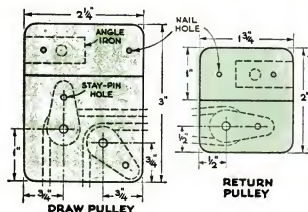


shown on the pattern. After sanding all edges smooth and rounding them, cut out the center of the carriers with a $\frac{1}{8}$ " band or scroll saw. The carriers will drop apart as sawing is finished. If you want a super job, sand the center edges.



ACTUAL SIZE

How you assemble brackets



THREE AWNING PULLEYS are needed for each traverse rod installation, two for the draw end, one for the return. Assemble the pulleys as shown between sheets of $\frac{1}{4}$ " plywood,

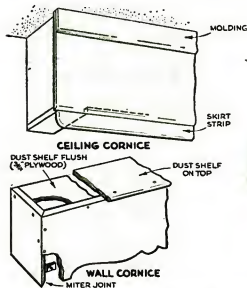
enough to run off freely. Hang it on a cord to dry.

Dimension the wood blocks that yoke together the leading pair of carriers on each drape to suit the pleats.

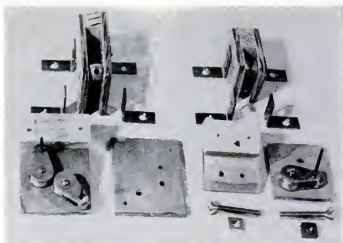
Attach the pulley brackets and rod supports to the cornice ends and screw the latter to the wall, using plaster anchors where necessary.

After shellacking the one-by-two bar, rub the top with paraffin. For smoother action also coat the inner edges of each of the carriers.

How you put up the cornice



TWO METHODS OF MAKING A CORNICE are suggested here—hanging it from a ceiling cleat or bracketing it to the wall with a dust shelf on top. If the ceiling is irregular and the top edge of the cornice board doesn't fit against it, use a molding strip. If more drape coverage is needed, add a skirt strip inside the cornice. When the cornice is faced with hardboard,

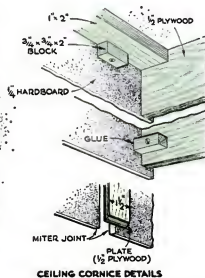
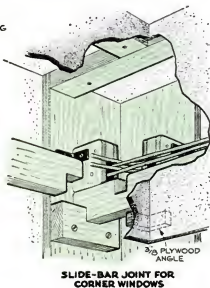


using spacing blocks equal in thickness to the pulley shells. Cut off the projecting nail points and rivet the ends. Attach the angle irons with small bolts run through the bracket.

To thread the draw cord through the pulleys, bend a loop in the end of a piece of wire solder, tie a string to the loop and hammer the loop flat. Tie the string to the end of the draw cord and shove the solder through the pulley.

For single drapes leave the cord ends hanging; for a double draw, pass the cord around a baseboard pulley mounted on a spring.

It is customary to place draw cords at the right end of a window, or at the outer ends of corner windows.



glue it to blocks spaced every 18" for a neat installation. Should wide windows require splicing the board, miter the joining ends and glue a plywood plate behind the joint. Box-joint in the center drawing above shows how the author held together two cornice boards in a free-hanging joint to hide the pulleys attached to his corner installation.

END

Towel Quiets Electric Shaver Used by Early-Morning Riser

THE buzzing of an electric shaver early in the morning or late at night may disturb a light sleeper. When you need to get out of the house before the family arises, wrap a small towel or facecloth around the shaver. It will cut the noise.

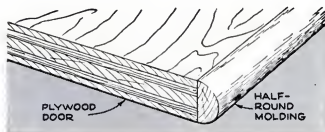
Restoring Lock Tension

FRICTION catches on downswinging doors, such as those on cabinets, clothes chutes and the like, sometimes wear smooth. One or two chromed, roundheaded thumbtacks stuck in the edge of the door often will restore tension.



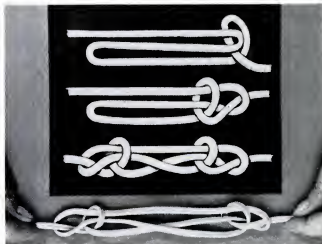
Bumpers Hold Logs in Barrow

HAULING logs in wholesale lots is no problem for Clyde W. Bailey of Wellsboro, Pa. By adding bumpers to his wheelbarrow, he can stack logs much higher. And they *are* bumpers: the end sections of an old Chevy bumper. The four bolts holding them are the original ones from the car.



Molding Finishes Plywood Edge

TO INSTALL a plywood sliding door on a closet, I worked out an easy finish for the vertical edges. By gluing and nailing on $\frac{3}{4}$ " half-round molding, I got a workmanlike job.—N. J. Mettelka, Manitowoc, Wis.



Navy Hitch Shortens Cord

You can shorten electric cords, rope or lines without cutting them if you use a Navy hitch. The illustrations above show the steps. If you want to shorten the line only temporarily, don't pass the ends through the end loops; then the whole knot can be shaken loose when desired.



Cement Holds Eyeglass Screws

THE hinge pins in eyeglass frames have a tendency to work loose. To anchor a pin, fill the sockets with rubber cement, and screw the pin in tight. If it's ever necessary, you can easily remove the cement.

WASTE &
KEROSENE

10 Extra Uses

By William B. Eagan

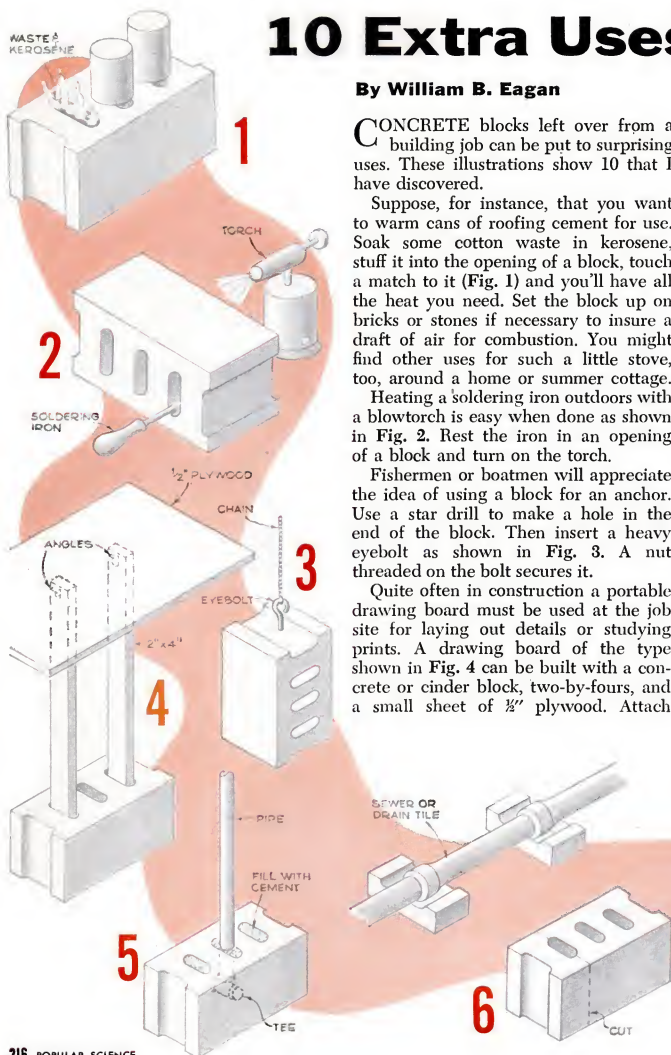
CONCRETE blocks left over from a building job can be put to surprising uses. These illustrations show 10 that I have discovered.

Suppose, for instance, that you want to warm cans of roofing cement for use. Soak some cotton waste in kerosene, stuff it into the opening of a block, touch a match to it (Fig. 1) and you'll have all the heat you need. Set the block up on bricks or stones if necessary to insure a draft of air for combustion. You might find other uses for such a little stove, too, around a home or summer cottage.

Heating a soldering iron outdoors with a blowtorch is easy when done as shown in Fig. 2. Rest the iron in an opening of a block and turn on the torch.

Fishermen or boatmen will appreciate the idea of using a block for an anchor. Use a star drill to make a hole in the end of the block. Then insert a heavy eyebolt as shown in Fig. 3. A nut threaded on the bolt secures it.

Quite often in construction a portable drawing board must be used at the job site for laying out details or studying prints. A drawing board of the type shown in Fig. 4 can be built with a concrete or cinder block, two-by-fours, and a small sheet of $\frac{1}{2}$ " plywood. Attach



for Concrete Blocks

the plywood to the uprights with two angle irons. Wedge the ends of the two-by-fours into the end block openings.

A good dirt tamper is often needed around a home. A block will provide one. Insert a length of 1" or 1½" pipe, with a tee screwed on one end, into the middle opening of the block (Fig. 5). Then fill all three openings with cement.

A workman whom I hired to install drain tile used sections of concrete blocks to support the tile. Each block was split through the center of each opening (Fig. 6) and the pieces made a cradle base for the tile to rest on.

The housewife will appreciate the two items illustrated in Fig. 7 and Fig. 8. Painted white, filled with soil and buried halfway in the ground, blocks will serve as handsome flower planters. Use them for boundary markers along driveways and walks and around ponds. Because of their weight, they make useful and novel umbrella holders when painted and decorated. Felt glued to the bottom of the block will prevent marring the floor.

Children will like a small garden seat that doesn't tip over easily. Wedge a wooden plug into each of the three openings of a concrete block. Then screw on a plywood seat and sides as in Fig. 9.

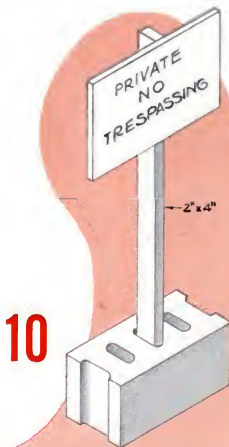
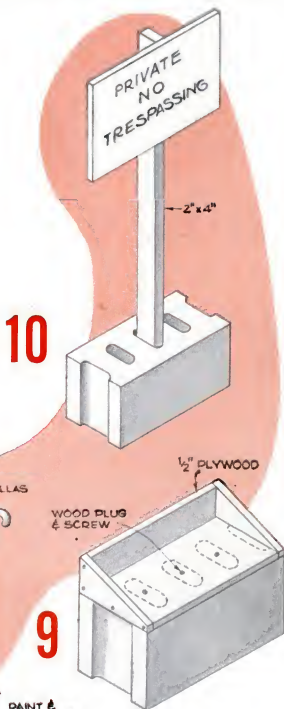
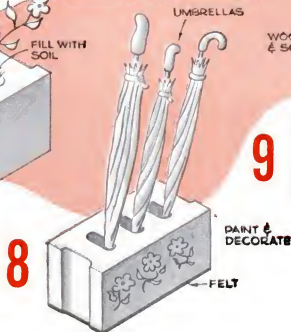
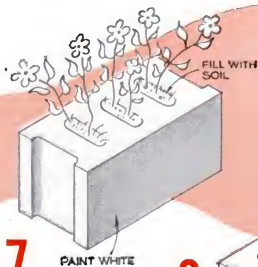
If you want to put a sign on your property, try using a concrete or cinder

block as its base, Fig. 10. It will save you the trouble of sharpening and driving the sign post into the ground.

And here are two more ideas:

For a quick and easy outdoor fire-place, place two blocks on the ground with a grille across them.

If you have a brook to bridge, place concrete-block piers on the banks and use cleated two-by-fours to span them.





How I Installed a Pop-Up Ironer

By Irving Lowell

THE gift of a portable ironer delighted my wife, but it gave me a problem. Where could I place the new appliance in an already crowded kitchen?

It would be very convenient, my wife suggested, if she could handle the mangle like an office typewriter—store it in a base cabinet, swing it out and up to table height. Could I do it? I could—and did. A counterbalanced mechanism for a swing-up typewriter platform from an office-supply house did the trick.

After deciding to locate the mangle in a double-door base cabinet, I removed the center stile, nailed it to one of the doors so that they would meet, and took out the shelves.

Only one change was required in the swing-up mechanism. The mounting brackets at each end had to be set farther apart so that they could be attached inside the ends of the cabinet. A welder cut the two horizontal bars and welded in bar stock to lengthen them. The regular typewriter platform was too short, so I made a longer one from 1½" wood.



New for the Handy Man

1. Linoleum Made Easy to Install. Linoleum strips 24" wide and a special tool kit enable you to tackle a floor job that is often left to a professional. Only the ends of these linoleum sheets need to be cut to size;

the long edges come trimmed and matched to give a seamless appearance. There are 15 patterns in light and standard thicknesses and in various lengths.



2. Folding Table Legs Come in Kit.

Screw-on metal legs are now available in the fold-away bridge-table type. They are strong enough to support Ping-pong and picnic-table tops that you want to store flat when not in use.



3. Hopper Spreads Mortar Fast and Level.

With one filling of this spreader you can lay two even strips of mortar (left) on the edges of 25 concrete blocks. It will also butter the ends (center) individually or in

groups. Thickness of the mortar is adjusted by a height gauge on one end, resulting in a clean job (right). The steel hopper has two wooden handles so that it can be lifted or pulled in either direction over the blocks.



More Handy Man Tips



4. Chain Opens and Closes Window. A flexible crank chain that becomes rigid when extended opens or closes an awning-type window as chain is cranked out or back into its sill housing. Provided with the mechanism is a set of hinges that slide in grooves to angle the window from the top.



5. Three Ladders Combined in One. This magnesium ladder is a lightweight extension ladder when you swing its hinged back frame up and lock it at 180°, or a stepladder when it is swung down and held with cross braces. The back telescopes so that you can set the ladder up on steps.



6. Earphone Finds Water Leaks. You don't have to be a Sherlock Holmes to locate a leaking water pipe. A sensitive earphone held against a pipe spots it for you by transmitting the sound to your ear through a lead button in the diaphragm.



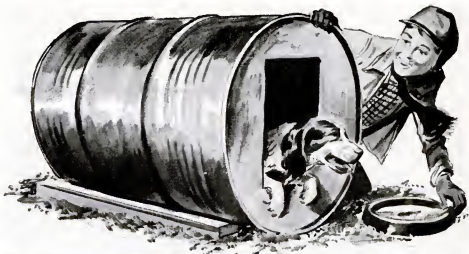
7. Floor Tiles Resemble Boards. Asphalt tiles 4" wide by 24" long simulating oak, walnut, maple or driftwood are being used to produce the effect of wood flooring. You lay them as ordinary tiles on wood or concrete in random-plank or parquet designs.

Further information on the products shown on this and the preceding page can be obtained from: 1. Armstrong Cork Co., 1010 Concord St., Lancaster, Pa.; 2. Jondonic, Inc., 224 West 7th St., St. Paul 1, Minn.; 3. Engel Enterprises, Box 225, Day Road, Cincinnati 31, Ohio; 4. H. S. Getty & Co. Inc., 3348 N. 10th St., Philadelphia 40, Pa.; 5. Moss Products Co., 2610 W. Berwyn Ave., Chicago 25, Ill.; 6. Aqua Survey & Instrument Co., 2518 Leslie Ave., Cincinnati 12, Ohio; 7. The Tile-Tex Division, Flintkote Co., 1232 McKinley Ave., Chicago Heights, Ill.

You Can Make a Snug Canine Quonset from an Oil Drum

A GASOLINE drum with a rectangular hole cut in one end makes a cozy, weathertight doghouse. Cold-chisel the doorway out and file or bend the metal to eliminate ragged edges.

Use plenty of straw bedding to keep the new tenant warm and comfortable.—E. V. Reyn-
ner, Townsend, Mont.



Lining Strengthens Envelope

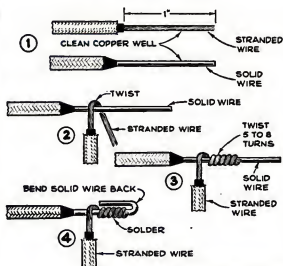
A CHEESECLOTH lining lessens the chance of coins or other small objects breaking through a mailing envelope. Apply thin coating of glue on the inside with a flat stick; then use the stick to push the material in place. Mark the envelope "hand stamp."



Clothesline Is Weatherstrip

A PIECE of clothesline can be used as substitute weatherstripping. Press it firmly into place and tack or staple it to the frame of the window or door. Then apply a coat of paint. Such line might also be used in some circumstances as a substitute for calking.

ELECTRICAL, FIXTURE SPlice



FOR YOUR POPULAR SCIENCE MONTHLY INFORMATION FILE.

A FIXTURE splice is used to attach stranded flexible wires, such as those found on home fixtures and electrical appliances, to solid power wires.

The solid wire remains straight until the stranded wire has been coiled around it. Then the solid wire is bent back against the coil and the entire splice made secure by flowing solder over and around the connection.

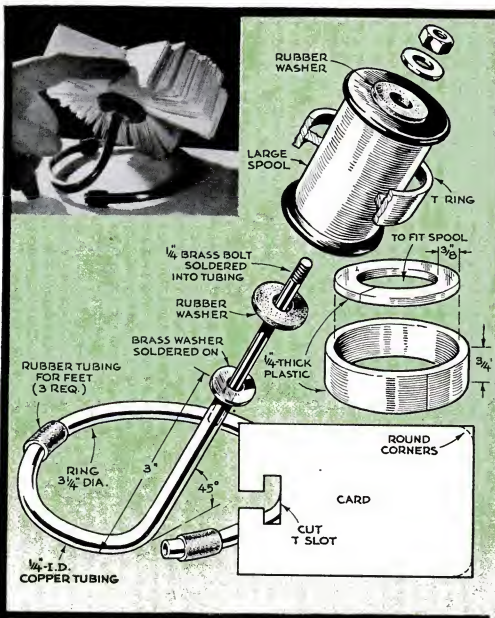
Wrap the joint well with rubber insulating tape and then friction tape. Be sure to lap the tape well over the frayed end of the stranded-wire insulation to prevent further unraveling of the covering.

Items You Can Build for the Home 'Office'

1 Find phone numbers quickly by spinning the rotary file at right. The hub is a large carpet-thread spool that revolves on a bolt. The bolt is soldered into a ring-shaped stand made of copper tubing that cocks the file at a convenient angle.

To hold the cards to the hub, build up a T-shaped ring from strips of clear plastic (you can get small scraps at hobby shops for little or nothing). Soften the strips in an oven, curve them to fit the spool snugly, and fasten them together with plastic glue.

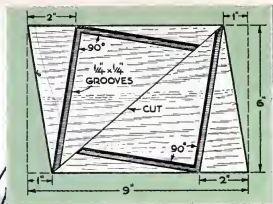
From standard 3"-by-5" index cards cut smaller cards to fit the width of the spool, with a matching T-shaped slot in one end so that they'll hook over the ring on the hub. Make up a set of slightly longer cards and letter the protruding ends to mark the alphabetical divisions. By turning the axle nut, you can adjust the spool's tension between the rubber washers.—
J. M. Finn, Pittstown, N. J.



2 A big ash tray can be made by bandsawing or turning a base from a piece of three-by-twelve. Cut a recess in the center for an inexpensive glass tray available at dime stores. Sand the wood

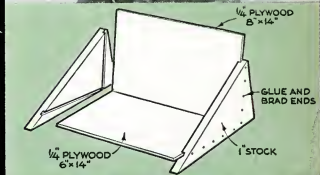
well and finish with stain and lacquer.

Form the legs from two 14" lengths of 1/4" rod, shaping them to fit the curve of the wood disk. Bend down 2 1/2" lengths at 90° on each end, and drill the rod for small wood screws to fasten the legs to the bowl.



3 Desk-top rack holds books at a distinctive cocked angle, easy to see and reach. It will also neatly store kitchen cookbooks or shop manuals.

You can cut the two triangular end pieces from a single 6"-by-9" board, as shown in the sketch. Dado the $\frac{1}{4}$ "-by- $\frac{1}{4}$ " grooves on a circular saw, or chisel them out between parallel saw cuts as in the photo. Fit the $\frac{1}{4}$ "-plywood back and shelf into the grooves, and then glue and brad the rack together.—Earle W. Thompson, Los Angeles.



4 Wall file sorts mail, bills, messages and other important papers where you can see and get at them easily. For a kitchen nook, use an inexpensive metal tray for a decorative backing. For a den or shop, make a plaque from wood or hardboard.



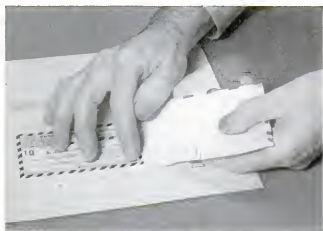
For the clips, glue up two rows of square wood clothespins, overlapping the ends about 2". Set the rows $3\frac{1}{4}$ " apart and screw them to the tray or backing panel.—Walter E. Burton, Akron, Ohio.





Gun Muzzles Kept Dust-Free

A FINGER cut from a glove and slipped over the muzzle of a gun keeps out dust when the gun is stored upright in a rack.



Sticking an Unstuck Corner

IF THE corner of a label, stamp or pasted-on photo or clipping won't stick, moisten the gummed flap of an envelope and supply adhesive by pressing the unstuck corner on it as illustrated in the photo above. Then draw the envelope flap out quickly.



Felt Pad Does the Sticky Work

CEMENT or tape a piece of felt to the bottom of a mucilage bottle. It will absorb excess mucilage and make a fine smoothing pad for paper after glue is applied.—Glen F. Stilwell, Manhattan Beach, Calif.



Light Cord Anchors Projector

A SLIDE viewer or other electrical equipment is in danger of being yanked off a table by anyone tripping over the electric cord. You can prevent this by wrapping the cord a few turns around the leg of the table to arrest the pull on the appliance.

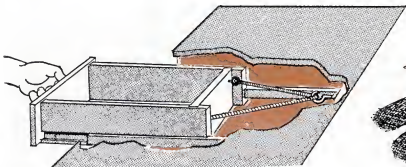


KEEPING THE

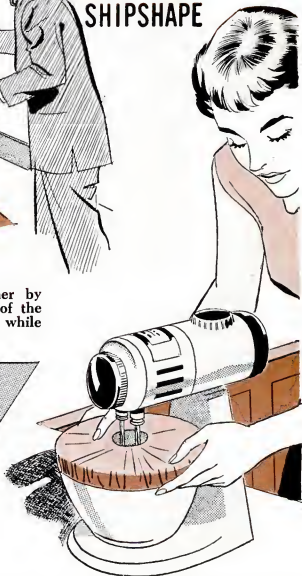
Home

SHIPSHAPE

PROTECT WALL-TO-WALL CARPETING in bad weather by spreading a large, heavy-plastic tablecloth in front of the door. Have your family and guests stand on the cover while they close umbrellas and remove their rain gear.

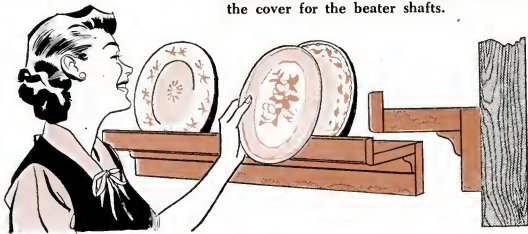


DRAWERS CLOSE EASIER if you put springs on their backs. Loop a screen-door spring over a cup hook centered in the back of the cabinet. Then hook the ends of the spring in screw eyes that are placed on each side of the back of the drawer.



SPLASHING BY YOUR MIXER can be prevented by placing an elastic-edged plastic cover over the bowl. Cut a center hole in the cover for the beater shafts.

A DISPLAY RAIL FOR PLATES can be made from two one-by-threes nailed together and then nailed to wall studs. Support the joint with glued and bradded cove molding, and add 1" base molding for trim. Counter-sink and fill nail holes, sand, and stain or paint.



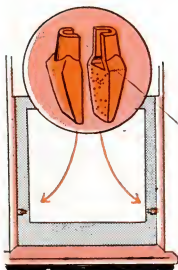
Please turn the page for more home tips

FEBRUARY 1956 225

More Home Tips

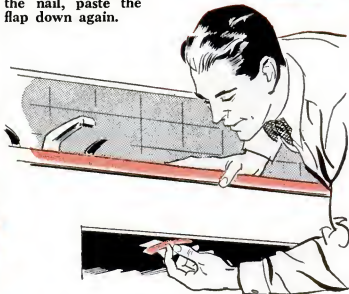


CATCH THE DUST when you sand or scrape a floor by hanging damp sheets over the doors. The sheets will keep fine dust from floating into adjoining rooms.



RUBBER WEDGES made by slicing a slip-on eraser in half will stop irritating rattles, such as a loose window, or level small household appliances. Eraser halves glued at intervals along the stop strip of a banging door will deaden the noise.

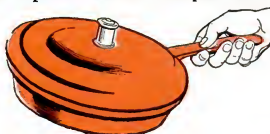
HIDE A NAIL HOLE in a papered wall by precutting a flap to cover it. Using a razor blade, make a small V-shaped incision. Lift the flap to drive in the nail. If you later remove the nail, paste the flap down again.



SHOPPING FOR FAUCET WASHERS will be easier the next time you need them if you note the sizes on slips of paper and tape these under kitchen and bath fixtures.



A PLANT TABLE made from a revolving office chair simplifies sunning house plants on all sides. Remove the chair back and attach a rounded piece of plywood to the seat. Cut this bigger than the seat to provide room for more pots. Finish to suit your taste.



A BROKEN POT-LID KNOB can be replaced by a wooden spool held on with a bolt, nut and washer. Peen the end of the bolt so the nut will stay tight and the knob secure.



SECRET OF SUCCESS in radio building is to make your mistakes on scratch paper. The first of four major steps is to plan the layout of major parts on paper (above), following the diagram. This also helps you determine chassis size.

Are you looking for an interesting new hobby? Here's what you should know about

Getting Started in Radio Building

By J. W. Rocke Jr.

BUILDING small radios is a rewarding hobby. Getting started, however, may be difficult because you don't know the little points that writers of manuals and how-to articles often take for granted.

You'll need to learn, first of all, how to understand schematic diagrams. The diagram of the AC-DC superheterodyne receiver on the following page is your key to this understanding. (The diagram is for study only and is not intended for use in building a set.)

Plan the chassis arrangement. The all-important first step in working from a diagram is to fix the location of each major part. You can do this by placing the parts on a piece of wrapping paper.

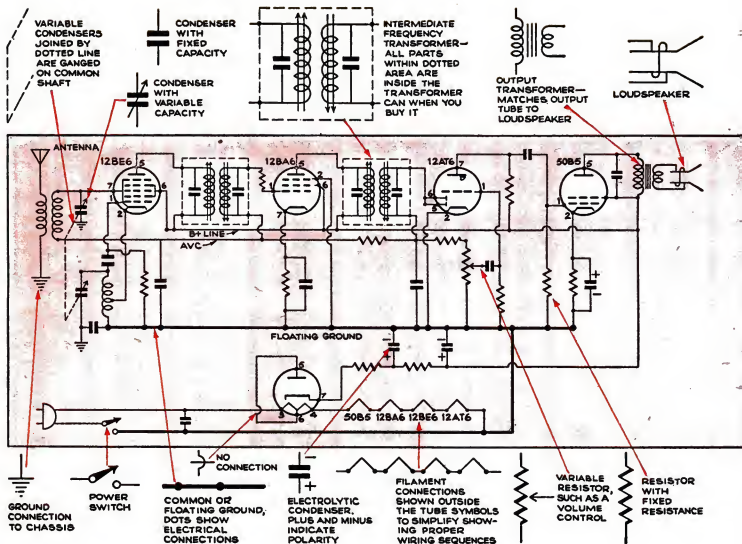
It's best to line up tube sockets in the order shown on your schematic diagram. Place the intermediate frequency (IF) transformers between the tubes, as on

the schematic. Locate the volume control and variable condenser where you want these shafts to come through the finished cabinet. Antenna and oscillator coils go in the easiest wiring positions.

Don't bother to find spots for the small parts yet. Small resistors and condensers will usually fit in as you wire.

Convert the schematic diagram into a pictorial, or working, plan by penciling in trial connections between the parts. The idea is to find the most direct and practical wiring plan that will avoid critical wiring mistakes—such as using unusually long IF grid and plate connections. It is usually a good plan to keep the parts in a straight line. Try several arrangements until you find one that will give the most direct wiring paths for the critical plate and grid leads.

The chassis. The parts arrangement you decide on will determine both size



and shape of the chassis. On your first attempt it's well to make the radio chassis fairly large for easy wiring. While shortness of plate, grid and B-plus wir-

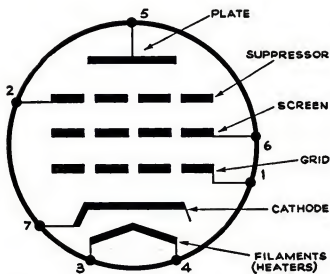
ing is stressed in radio construction, it doesn't necessarily mean crowding the parts to extremes. Crowding can actually be detrimental.

Before installing tube sockets in the chassis give a little thought to their orientation. If you rotate a socket a quarter or half turn from its random position you can often prevent an awkward wiring situation.

Chassis wiring. Where do you begin wiring the chassis? Might as well start with the filament terminals (or lugs) on the tube sockets. They are good practice for the tougher jobs ahead.

First take a look at the tube symbols on the schematic. Notice that no filaments are drawn inside the circles; they are set off by themselves at the bottom of the schematic, along the power cord. (This is a common practice to simplify diagramming and wiring a set.)

The filaments, unlike other tube elements, do not get involved with the



TUBE SYMBOL represents the working parts (elements) of a tube. These are connected to pins, identified by number. Find the corresponding numbers on a tube socket by looking at the underside; start counting at the space (or key) and go clockwise to the desired pin.

signal; they simply provide a supply of electrons for the tube to use. Follow the schematic wiring order to minimize hum. In an AC-DC set like the one shown, filaments are strung along in series, like the cheaper Christmas-tree lights. (Not all sets have series-wired filaments; in the AC-DC set, series wiring eliminates a power transformer otherwise necessary.)

For best set operation, the other tube elements should be wired into the shortest possible signal path, the way they are usually shown in the schematic.

It's a good idea to wire one section at a time, to prevent mistakes. I have found, however, that wiring critical parts is easier if you make all IF transformer-to-tube connections before adding the required resistors and condensers.

Early in the hookup work you will be looking for spots to make common connections. Your pictorial layout will help by showing up usable parts terminals. You can use soldering lugs on major parts and appropriate tube-socket lugs for most of your common connecting points. But don't tap into a wire running between terminals—it makes a poor mechanical connection that could vibrate loose. If you have a junction that does not come together on a lug, mount a separate terminal strip to provide a tie point.

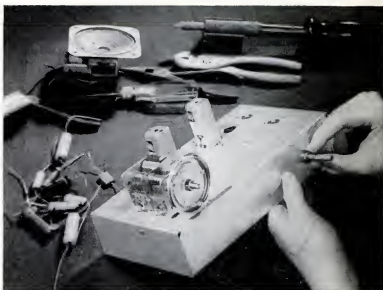
Soldering wires to common-connection lugs is much easier if you do it only after you're sure no more wires join together at that point. This prevents having to solder a connection more than once.

Using spare parts. Spare-parts boxes and inexpensive surplus parts are invaluable to the experienced radio man but can be a headache to the novice builder. Too often these parts carry no identifying code to show how they should be wired into a circuit. In selecting oscillator, antenna, RF and IF coils, for example, it pays to buy new parts—unless you know for certain the values and terminal connections of the parts in question.

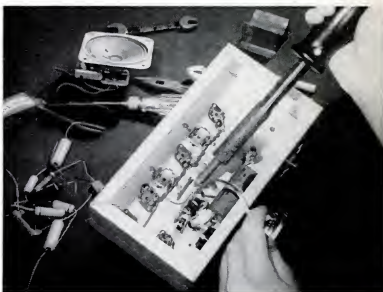
Resistors and fixed condensers carry a color code for ready identification, so they are an asset to any spare-parts box. Unless quite an assortment is at hand,



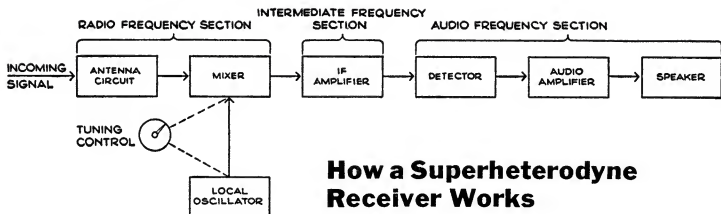
SECOND PLANNING STEP is to pencil trial connections between the parts as they lie bottom-side-up. Instructions with them identify the terminals. Keep the wiring paths short.



FIRST MECHANICAL STEP is to lay out the chassis and cut holes for the parts. Follow the arrangement made on paper and mount all parts securely before soldering connections.



SECOND MECHANICAL STEP is wiring. Do filaments first, twisting the leads together where possible. A terminal strip makes a handy mount for power resistor and also provides tie points.



How a Superheterodyne Receiver Works

WHEN you tune in a radio station on a superheterodyne receiver, you're actually tuning two circuits in the set simultaneously. A radio-frequency (RF) circuit picks out the signal you want from all those being broadcast. A local oscillator circuit generates a second signal that is 455 kilocycles higher than the broadcast signal.

The two signals meet inside a mixer tube and react with one another to produce an intermediate frequency (455 kc.) signal. This change in the radio-frequency part of the signal does not affect the audio part that contains music or speech.

It's the use of a fixed intermediate-frequency (IF) section that explains superhet

popularity. Instead of selecting and amplifying broadcast signals at many radio frequencies, the superhet converts all RF signals to a single frequency (the IF). Interfering signals are blocked in the process and the initial critical amplifying is always done at the same frequency. Key parts can therefore be chosen for best performance at a single frequency.

Now sharper and stronger from its passage through the IF section, the signal is split into its radio- and audio-frequency parts by the detector tube. The RF is discarded and the audio is further strengthened in the audio amplifier. A loudspeaker converts electrical energy into sound.

however, you are not likely to be lucky enough to pick out all the values called for by a specific plan. You can sometimes substitute values near the ones called for, if you don't mind correcting a bad guess now and then.

In selecting a suitable substitute, remember that manufacturers allow a tolerance for small resistors and mica condensers. The average tolerance on these parts is 10 to 20%. For that reason a resistor or condenser having a value close to that called for may work.

Aligning the set. Don't be disappointed if your receiver doesn't work the first time you turn it on. Wiring and assembly may be perfect, but you won't hear a sound unless all major parts function as a team—unless they are in alignment. Once you understand how a superheterodyne receiver works you will see why alignment is so important, and why salvaged parts are poor economy for the beginner.

From the summary above of how a superhet works, it's easy to see why the

values of parts in the set are critical. Antenna and local oscillator circuit parts must team up to produce an unvarying 455 kc. difference. The IF transformers must both be aligned (by means of their tuning slugs) to this intermediate frequency, and they must properly match the other circuit components. Obviously, parts of unknown value are simply an added liability.

To align, or tune, all the RF and IF sections of the set, the novice builder will probably do best to take it to a serviceman who has the equipment for such a job.

Chances are that your first or second home-built set will receive strong local stations—at least if you've selected the major parts from the designer's parts list. New IF coils are aligned by the manufacturer. They should require very little adjustment in the completed receiver, provided the rest of the set is in balance. You can usually improve alignment by following the instructions given with the original diagram.

END

Four Photo Tips

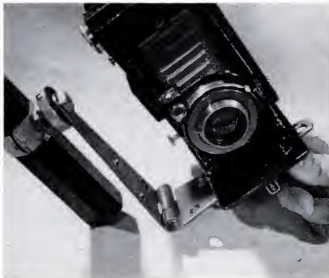


1 RESTORE GRIPPING POWER to the clamp on a photoflood reflector with heavy rubber bands. Twist them around the clamp arms in place of tubing that is rotted or worn.

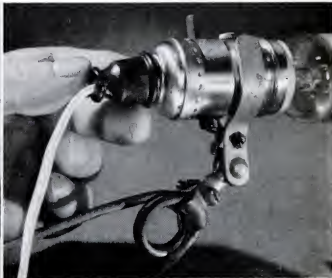
2 ADJUST TRIPOD LEGS easily by slipping tight-fitting crutch tips—with ends cut off—over the knurled locking sleeves. Then the knurls can't dig into your fingers when you loosen a jammed sleeve. Uncut tips on the leg ends set them for steady shooting.



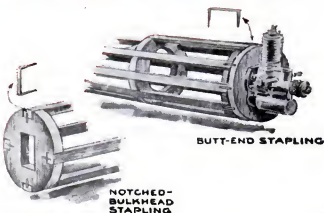
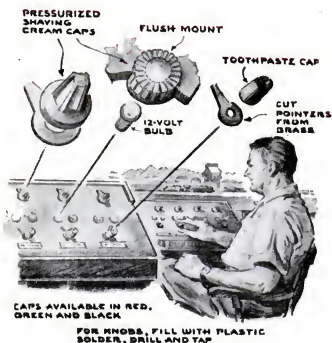
3 AN ADJUSTABLE FLASH-GUN BRACKET can be made from a strap hinge. Stiffen the hinge by hammering the pin ends. Insulate the bracket with fiber washers if the gun case is metal.



4 FRAYED LAMP CORDS can be avoided if you push a rubber nipple over the threaded pipe on a photo-lamp socket. An auto distributor-cap nipple just fits, and it's heat resistant.

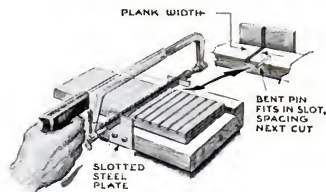


Useful Ideas for the Modelmaker

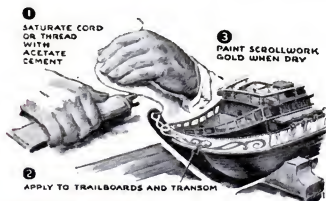


STAPLES Engine mounts won't tear free from the fuselages of your model planes if, after using cement for assembly, you reinforce all critical joints with staples.

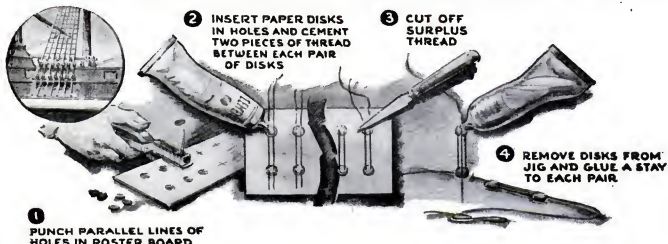
CAPS Don't throw away plastic caps. You can use them for everything from wheels to headlights. On a model railroad control board, they make handsome dials and color signals.



PLANKING Here's a handy way to simulate planking on a large model. Make a miter box for your hacksaw. Then lay out the work so that the cuts run with the grain.



SCROLLWORK It takes a clever woodcarver to whittle scrollwork on a ship model. Using thread or cord instead gives professional results in much less time.



DEADEYES Why get the shakes threading deadeyes for a ship model?

Punch them from poster board and the perforated sheet becomes an accurate spacing jig.



Some scrap wood, containers and batteries show

How to Take Water Apart

By Andrew Pfeiffer

THE chemical formula that nearly everybody knows is H_2O . If you're the Missouri type and want to see for yourself that heavy, wet water is, strangely enough, a combination of two light and dry gases, it is fairly easy to take some water apart. You will get (by volume) two parts of hydrogen gas and one part of oxygen gas— H_2O .

You can take water apart the same way that it was first done 150 years ago by two Englishmen, Nicholson and Carlisle. They connected a battery to two electrodes in water and found that hydrogen bubbled off one electrode and oxygen bubbled off the other.

A convenient rig to

use is a simple one that is described in a book put out by the United Nations Educational, Scientific and Cultural Organization. It is intended to promote scientific training in underdeveloped countries, and it is ideal for quick construction at home. Even youngsters can build it.

What you need. For electricity, an automobile storage battery is fine, but several No. 6 dry cells (1½ volts) connected in series will do nicely, too. The electrode tips are bits of a carbon rod pulled out of an old flashlight cell. These are supported on plastic-insulated No. 14 solid-copper wires 9" long. You can scrounge the wire from an odd length of BX or Romex cable. You also need two Fahnestock clips or binding posts.

The water holder is a 24-ounce clear-plastic freezer container. You catch the hydrogen and oxygen in test tubes (the glass tubes that toothbrushes and cigars often come in are okay).

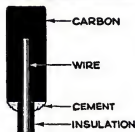
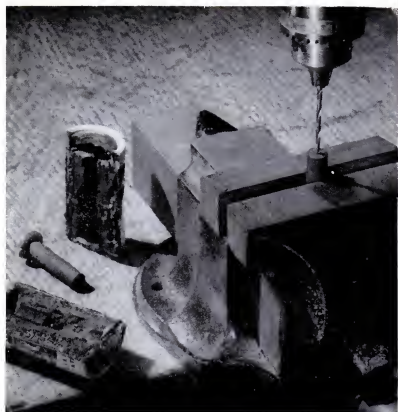
Make the stand from scrap wood, cut as shown in the photograph and assembled with screws. Three of the little wooden blocks position the tank. The other two hold the electrodes and can be marked negative (where hydrogen collects) and positive (where oxygen collects).

Electrodes. Hacksaw the flashlight cell lengthwise and carefully remove the carbon rod. Cut two ¾" pieces off the rod, clean them well, and drill a ½"-deep hole in the end of each with a No. 52 drill. Do not drill through.

Cut off insulation for ¾" on one end of each of the electrode wires. Insert this end into the carbon, making sure that the insulation butts against the carbon. Coat the joint with household cement. (The experiment will not work if this is not done carefully.)

Bend the wires to shape and loop their free ends, from which 1" of insulation has been removed, under the screws holding the connector clips.

The experiment. If you put this all together and start the juice, nothing will happen. Water is a remarkably poor conductor of electricity. But you can



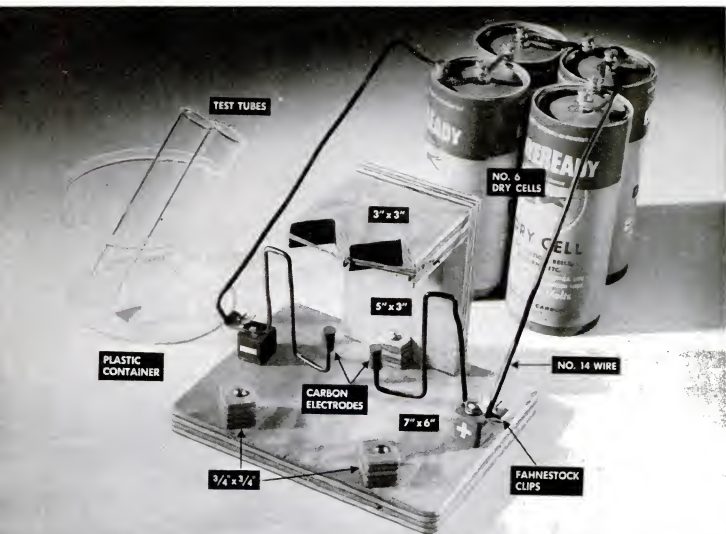
ELECTRODES, which feed electricity into water, are made from carbon rod of a flashlight battery. Piece of rod, drilled ½" with No. 52 drill, is slipped over bared end of wire. Seal the connection as shown in the sketch (left).

quickly make it conductive by adding some washing soda (three tablespoons to a quart).

The tank should be filled until the electrodes are submerged ¼". Set up the test tubes this way: Pour the soda-and-water solution into each tube until it overflows. Put a square of paper over the tube mouth, invert the tube, submerge the mouth in the tank, let the paper fall away (fish it out later), and carefully slip the tube over the electrode without allowing the mouth to break water. If you do this properly, your tubes will be totally water-filled, without air bubbles that would confuse the results. Rubber bands, looped over brads, hold the tubes in the notches of the stand.

Now you are ready to start perking. Hook the negative battery terminal to the negative electrode, positive terminal to positive electrode.

Almost immediately you will see



ODDS AND ENDS make apparatus. The stand shown was built of $\frac{3}{4}$ " plywood, but other scrap wood can also be used. Dimensions should be varied to suit the water container.

streams of tiny bubbles rising in each tube. The hydrogen comes off much the faster, making its tube appear milky.

The proof. After a while, you can see that the hydrogen tube (negative) contains approximately twice as much gas as the oxygen tube. Only approximately, because much more oxygen than hydrogen dissolves in the water and disappears from view.

How do you know that it's hydrogen in the negative tube, oxygen in the positive? Test them.

Remove the negative tube from the stand, keeping it inverted and allowing the water to spill out. (Hydrogen, being lighter than air, stays inside the inverted tube.) Bring a flame—a burning soda straw—close to the tube mouth as you turn the tube up. The hydrogen will flow



MINIATURE EXPLOSION proves that larger quantity of gas (from negative electrode) is hydrogen. Hold a small flame near mouth of tube and tilt the tube up. It will pop noisily.

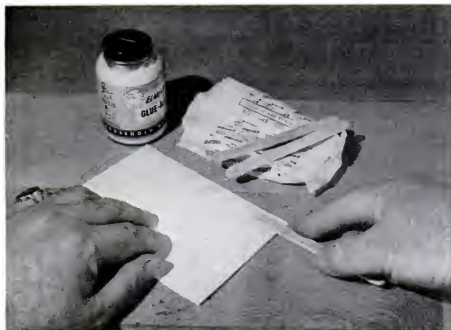
up and out, mixing with air. When the hydrogen-air mixture reaches the flame, you should get a very satisfactory *pop!*

To check on the oxygen, remove the tube, keeping it inverted and spilling the water. Instead of a flame, use a glowing ember—a pine sliver, say. Insert it up into the inverted tube. It should burst into flame when it meets the oxygen.

Okay? Water is H_2O .

END

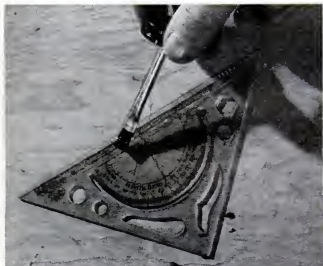
Why Not Save Ice-Cream Sticks for Spreading Glue?



THE flat sticks on which ice cream is frequently sold make good glue spreaders. Have members of your family save them. You can put the sticks to use handily when you are applying thin layers of glue on paper, cardboard, or other surfaces.

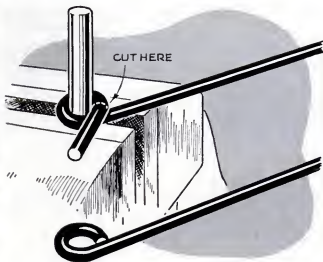
Lead Shot Is Mixer

IF you keep a little lead shot in a bottle of white or colored drawing ink, the contents will mix with fewer shakes. The pellets speed up the process.



Adhesive Skidproofs Template

A COATING of rubber cement on the underside of a celluloid or plastic design template keeps it from sliding on the paper. Let the cement dry before using, so that it won't stick tight. Spots of masking tape will do, but rubber cement is transparent.

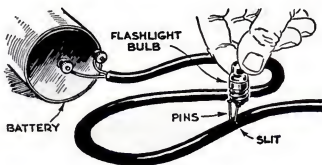


Rod Helps in Looping Wire

FORMING a loop on an end of heavy wire with pliers is a difficult job. It can be made easy if you twist the wire around a steel rod held upright in a vise. Cut off the excess length with a hacksaw and position the loop by gripping it with the pliers.

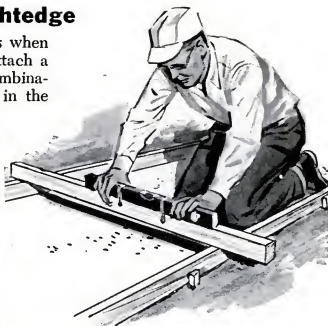
Tester Made from Pins Locates Break in Long Heavy-Duty Cord

INSTEAD of discarding a broken heavy-duty cord, I cut it at the break and had two shorter cords. I located the break by testing at 4' intervals: slitting through the insulation and inserting two common pins in the wires. With one end connected to a dry-cell battery, a 1½-volt flashlight bulb, touched to the pins, would light until the break was reached. Rubber cement and tape restored insulation.—F. V. Betlach, Owatonna, Minn.



Level Is Combined with Straightedge

NEED a long level that will span the forms when you set them up for a concrete sidewalk? Attach a small level to a length of two-by-four for a combination level and straightedge. Bore two holes in the two-by-four to take cord or wire.



Card File Indexes Spare Parts

TINY replacement parts can be stored right on their own file card and indexed for ready location when needed. Glue a heavy-cardboard ring to the prepared card, put the parts in, and seal with a transparent disk.

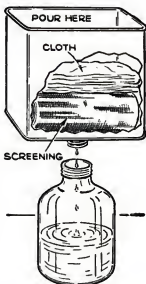


Brush Makes Piggyback Scraper

GLUE a suede shoebrush to the back of a paint scraper to make a work-easing combination tool. A turn of the handle gives you the brush to clear off scrapings.

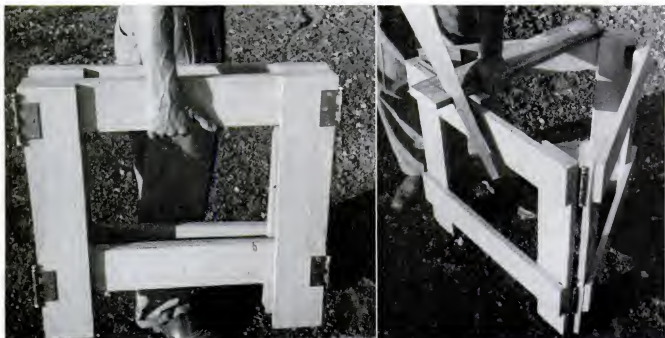
Tin Can Is Strainer and Funnel

A QUART can with a spout, a piece of rolled-up window screening and several thicknesses of cloth will strain paint solvent and other liquids for further use. Cut the bottom out of the can and fit the rolled-up screen over the spout end. Place the cloth on top. You may have to change the cloth to clean some fluids.—C. H. Hardy, Los Angeles.



Iron Arm Speeds Riveting

ATTACHING the punch to a bent length of strap iron so that it is suspended over the anvil gives you a third hand when setting rivets. Clamp the arm to the bench, and hold the punch on with rubber bands. Both hands will then be free for the work and hammer, making the job much easier.



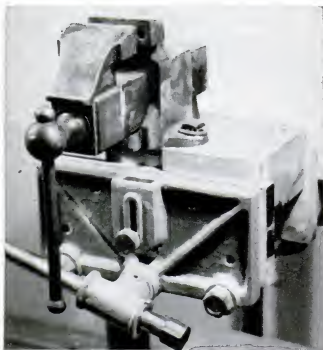
Triangular Sawhorse Sets Up Shop Anywhere You Want It

THIS triangular sawhorse can be taken apart quickly, stored flat, and carried to a job in one hand.

It is made by assembling three frames of 1"-by-5" board 24" long, as indicated in the photos. Attach two loose-pin hinges to each

of the ends. You just pull out the pins to collapse the piece.

When it is set up in U shape with one corner open and a plank on top, you can use it as a scaffold or temporary workbench.—*R. G. Cooper, Trenton, Ontario.*



Two Vises Take Space of One

You can use a metal vise for occasional jobs without taking bench space. Bolt the vise to a T-shaped adapter, made by screwing two hardwood blocks together, and clamp in the woodworking vise. There is no need to remove the adapter for storing. My vise has a steadying lip, so I notched the adapter to take it.—*H. J. Gerber, Stillwater, Okla.*



New Life for Old Jigsaw Blade

BY RAISING the work up to the unused portion of a tooth-worn jigsaw blade, you can double its cutting life. Make a second table out of 1" stock, drilling a center hole to admit the blade. Then screw it to the jigsaw table at the front and the back.

AMERICA'S FAVORITE FISHING MOTORS!



JAVELIN*	.....	30 hp	..	\$582.00
SEA-HORSE 30*	.....	30 hp	..	552.00
SEA-HORSE 30	.....	30 hp	..	462.00
SEA-HORSE 15*	.....	15 hp	..	452.00
SEA-HORSE 15	.....	15 hp	..	362.00
SEA-HORSE 10	.....	10 hp	..	321.00
SEA-HORSE 7½	.....	7½ hp	..	241.00
SEA-HORSE 5½	.....	5½ hp	..	216.00
SEA-HORSE 3	.....	3 hp	..	146.00

*Electric Starting... Prices f.o.b. factory, subject to change... Mile Master Fuel System included with all models except the "3"... OBC certified brake hp at 4000 rpm (30's at 4500).



The New
Sea-Horse 7½

More fishermen use Johnson Sea-Horse outboard motors than any other make. Because they are **DEPENDable**... Now **NINE** models—from 3 to 30 hp—all styled in beautiful Holiday Bronze! See your Johnson Dealer. Look for his name under "Outboard Motors" in your classified telephone directory.

FREE: For complete details on all new Johnson Motors and all new features for 1956, write for the new Johnson Sea-Horse Booklet.

JOHNSON MOTORS, 500 Pershing Road, Waukegan, Illinois
A DIVISION OF OUTBOARD, MARINE & MANUFACTURING COMPANY
In Canada: Manufactured by Johnson Motors, Peterborough

Johnson

SEA-HORSES

FOR DEPENDABILITY

Now...
a versatile B-C powered flashholder
you can carry in your pocket!

New Kodalite Super-M Flashholder

With a Kodalite Super-M Flashholder you can be truly ready to take flash pictures *any time, anywhere*. It's small enough, as is, to fit into your pocket. And when you're really pinched for space, you can slip off the 3-inch reflector, unscrew the bracket . . . and tuck the whole unit into a corner of your gadget bag. The Super-M accepts No. 8, 5, or 25 bulbs as well as low-cost M-2 bulbs—and is battery-condenser powered* to provide top flash dependability. A universal mounting bracket and interchangeable, flash-post connector tips (ASA and Continental-type) enable the Super-M to fit most any shutter-synchronized camera.

You'll like the Super-M's handling ease, too . . . the push-button bulb release, the sliding scale flash-calculator on the back, the natural-handle grip that assures steadiness. Smartly styled in your choice of brown or black, the Super-M is the most versatile miniature flash holder Kodak has ever built. Visit your dealer and see it soon. Only \$9.95 (battery extra).

*This is why we recommend B-C Flash . . .

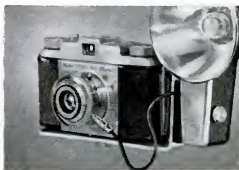
As you know, the batteries in a regular flash holder grow weak with usage. When this happens, a flashbulb is often slow to fire—or fails to fire at all. Result: you miss the picture.

With B-C (battery-condenser) powered flash, you needn't worry about "slow-fires" or misfires from a weak battery. A small photo-flash battery (a 15-volt battery in the Kodalite Super-M Flashholder) feeds current into a condenser which stores up energy

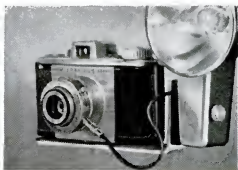
until needed. When the camera shutter is tripped, the condenser releases a bulb-firing surge of energy many times stronger than that produced by the usual 1.5-volt flashlight battery.

One of the nicest things about B-C is that besides prolonging the battery life, it also gives you positive, full-force voltage for hundreds of shots. Even when the battery begins to weaken, you get full voltage every time the shutter is tripped . . . Be certain with B-C!





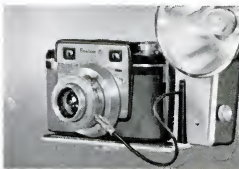
KODAK PONY 135 CAMERA



KODAK PONY 828 CAMERA



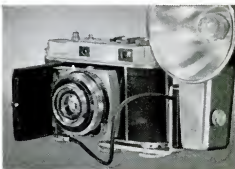
KODAK SIGNET 35 CAMERA



KODAK BANTAM RF CAMERA



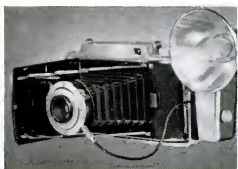
KODAK RETINA IIIc CAMERA



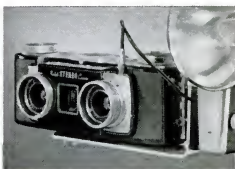
KODAK RETINA IIc CAMERA



KODAK CHEVRON CAMERA



KODAK TOURIST II CAMERAS



KODAK STEREO CAMERA

The Kodalite Super-M Flashholder fits all the flash-synchronized cameras on this page—and many others

ASA Bayonet Connector

Kodak Bantam RF Camera. Kodak Chevron. Kodak Flash Bantam. Kodak Pony. Kodak Signet 35. Kodak Stereo. Kodak Tourist. Kodak Medalist. Kodak Reflex. Polaroid Model 95. DeJur Reflex. Ricoflex. Stereo Graphic. Condor I. Mamiyaflex. Tower Reflex. Videon.

European

Bayonet Connector

Kodak Retina IIIc, IIc, Ib, Ila. Retinette f/4.5 and f/3.5. Ansco Super Speedex, Speedex, Viking,

Karomat, Regent, Super Regent, Memar, Super Memar. Voigtlander Perkeo, Bessa, Prominent. Vito II, Vitessa Jr., Vito B. Zeiss Ikonta, Super Ikonta, Nettar, Ikoflex Ia, Ila, Contaflex I, II, Contina Ia, Ila, Ikonta 35. Konica. Minolta. TDC Stereo Colorist. Bower X. Bower 35. Dacora. Belfoca. Edinex. Edixa. Bolsey Explorer. Paxette. Super Dollina. Weltax. Welti. DeJur D1. Iloca Quick B. Futura S. Diash. Alpha 4, 5, 7. Minolta A. Nikon S-2. Baldix, Baldax. Baldalux. Baldina. Super Baldina. Baldi-

nette. Realist A—35mm. Realist B—35mm. Lordomat. Lordax Jr. Lordax I. Photrix B. Condor II. Solida. Rolfix. Iloca Stereo. Photrix Stereo. Wirgin Stereo. Edixa Stereo.

ASA Bayonet Connector and Kodak Clip-On Connector

Graflex 22. Realist St 41. Realist St 42. Revere. Wollensak. Argus C4. Graphic 35. TDC Colorist.

Price is list and includes Federal Tax.

Eastman Kodak Company, Rochester 4, N. Y.

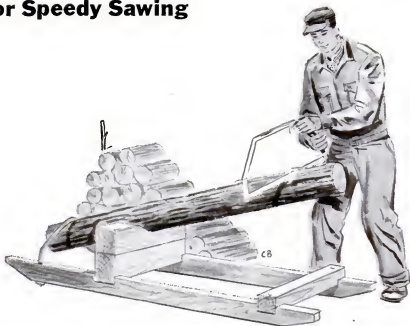
Kodak
TRADE MARK

Support Holds Logs for Speedy Sawing

You can saw a long log into fireplace lengths in one-two-three order with a holder like this one.

A U-shaped piece of $\frac{3}{4}$ " steel rod holds down one end of the log. A V-notched cross-piece supports the log at an angle and prevents lateral movement. The weight of the free end of the log keeps the kerf open as you saw.

Thread the ends of the $\frac{3}{4}$ " rod, push through the frame and secure with nuts. Use four-by-fours for the frame.



Headlights Are Wind Indicator

AN ORNAMENTAL wind indicator in front of the home of Alvin Arp, near Walcott, Iowa, was made from three automobile-headlight shells. The shells were mounted on channel-iron arms welded to the hub of a car wheel. The hub turns on a spindle welded to a pipe post set securely in the ground.



Novel Dumb-Waiter Saves Steps

AN OUTSIDE dumb-waiter eliminates a lot of stair climbing for a second-story tenant in this house. Rigged up by N. Brown of St. Petersburg, Fla., it lets him haul up the garbage pail to where he can reach it. Hooks engaging the handles of the pail hold it securely to the moving platform.

Men with mechanical skills: **measure yourself against this yardstick**



Mechanics Creed



Upon my honor I swear that I shall hold in sacred trust the rights and privileges conferred upon me as a certified mechanic. Knowing full well that the safety and lives of others are dependent upon my skill and judgment, I shall never knowingly subject others to risks which I would not be willing to assume for myself, or for those dear to me.

In discharging this trust, I pledge myself never to undertake work or approve work which I believe to be beyond the limits of my knowledge; nor shall I allow any superior to persuade me to approve aircraft or equipment as airworthy against my better judgment; nor shall I permit my judgment to be influenced by money or other personal gain; nor shall I pass as airworthy aircraft or equipment about which I am in doubt, either as a result of direct inspection or uncertainty regarding the ability of others who have worked on it to accomplish their work satisfactorily.

I realize the grave responsibility which is mine as a certified mechanic, to exercise my judgment on the airworthiness of aircraft and equipment. I, therefore, pledge unyielding adherence to these precepts for the advancement of aviation and for the dignity of my vocation.

This challenging creed has made the U. S. Air Force the finest technical service in the world. If you are a man who feels a deep sense of satisfaction from the knowledge of a job well done, the U. S. Air Force offers you a rewarding and exciting life. Skills you acquire in the Air Force will help you choose and succeed in your future career.

**YOU GO PLACES FASTER ON THE
ALL VOLUNTEER TEAM**

THE U. S. AIR FORCE

Paste Coupon on Postcard and mail to

M-45-PS

**Airman Recruiting Information Branch
Box 2202
Wright-Patterson AFB, Ohio**

Please send more information on my opportunities for enlisting in the U. S. Air Force. I am between the ages of 17-34 and reside in U. S. A. or possessions.

Name

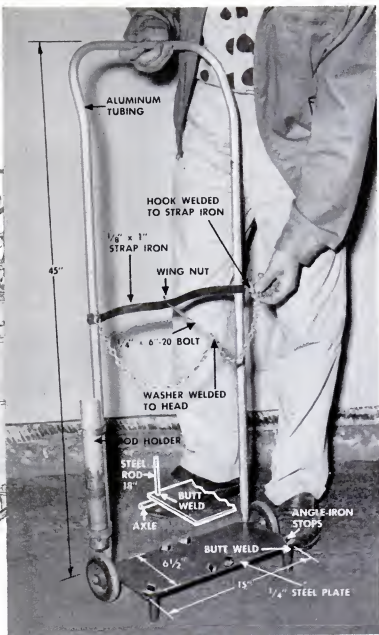
Address Age

City Zone State



Parts Salvaged from Child's Stroller Make Welding Cart

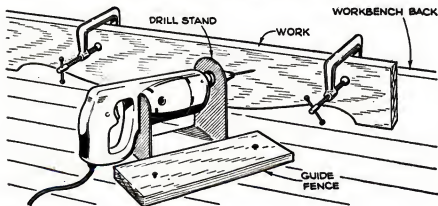
THE handle, axle and wheels from a child's stroller helped in making a handy rig for my welding tanks. The aluminum-tubing handle was pushed over two steel rods that I welded to a base plate, to which I also fused the axle. If your stroller axle doesn't seem sturdy enough, use $\frac{3}{8}$ " steel



rod. In fact, if an old stroller isn't available, you can bend a handle out of a length of tubing and use any pair of wheels.

Bolt a harness to the handle and weld legs and angle-iron stops to the base. I keep welding rods in tubing strapped to the handle.—*M. C. Anderson, San Lorenzo, Calif.*

Simple Setup Enables You to Drill Holes at Any Desired Angle



With a strip of wood as a guide for an electric drill resting on a stand, you can bore accurate angular or 90° holes in small stock. Clamp the work to the back of the bench. Then tack the guide at the desired angle to the bench top. Slide the unit along the guide.—*R. G. Cooper, Trenton, Ontario.*

It takes *more* than a heavy foot to "flatten" Pikes Peak in record time.

by Ed Cole, Chevrolet Chief Engineer

A few days ago, I was talking to a neighbor of mine about Chevrolet's record-breaking run up Pikes Peak. "How," he asked, "does that make the new Chevrolet a better car for *me* to drive? I hardly ever drive on mountain roads, at least not on any as steep or high as Pikes Peak!"

Maybe this same question applies to *your* driving. But have you ever considered what it takes to climb Pikes Peak in a little over 17 minutes, the way Chevrolet did?

Well, it takes a lot more than a heavy foot on the accelerator. For one thing,

it takes superior cornering ability—a quality that involves not only the steering geometry, but the balance of the entire car. And how this new Chevy clings to the curves!

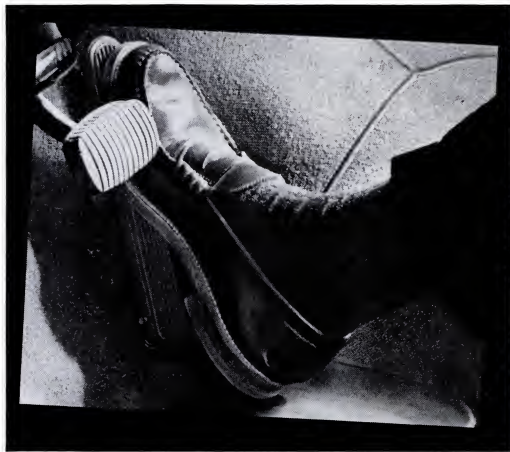
Then, it takes a ready reserve of power for acceleration. We've engineered that into all Chevrolet engines—both the 6 and the V8's. In fact, our horsepower now ranges up to a new high of 205!

Aren't these the very qualities you want in your car? Whether you drive in mountains or not, Chevrolet's inherent stability and lightning acceleration add up to more safety and pleasure for you.

Ask your Chevrolet dealer to lend you the key. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.



*Here's how Chevrolet proved
its superior cornering ability.*



*It takes power to sprint
up this towering grade.*



*Chevrolet challenged
a mountain—and won!*



an all



DELTA . . . world's most complete power tool line
53 machines . . . 246 models . . . over 1300 accessories

new

ROCKWELL-BUILT

DELTA

10" tilting arbor bench saw

Now you can get big 10" saw capacity and performance—for little more than the price of an 8" saw! One look will convince you that it's the finest bench saw ever built for home workshops—that it's the biggest dollar-for-dollar value you've ever seen! Look at what you get:

BIG CAPACITY—You can handle practically any job because it lets you cut stock up to 3½" thick, rip to the center of a 48" panel.

REAL ECONOMY—You get all the features and advantages of a big saw at a price that will really surprise you. And its solid construction assures minimum maintenance.

PRECISION—You get all the power and precision you need to do fast, accurate cutting on every job.

SAFETY—Completely shielded drive mechanism provides maximum safety, prevents damage to saw. A new push button switch prevents accidental starting, provides fast emergency stopping.

See this great new Delta 10" Bench Saw—try it yourself—compare it! Get all the facts, and make up your own mind! Your Delta Dealer is listed under "TOOLS" in the classified pages of your phone book. Send the coupon for catalog details—today!



DELTA QUALITY POWER TOOLS

Another Product by **Rockwell**



*Send The Coupon
For All The Facts!*

**DELTA QUALITY
COSTS NO MORE**

Delta Power Tool Division, Rockwell Manufacturing Co.
504B N. Lexington Avenue, Pittsburgh 8, Pa.

- ☐ Please send name of my nearest Delta Dealer.
☐ Please send Delta Industrial Catalog on new Delta 10" Tilting Arbor Bench Saw.

Name

Address

City County State



Doorstop Protects Work Face

A RUBBER door wedge placed under the head of a hammer will enable you to pull out a nail without denting the work.



Tape Skidproofs Trouser Bar

TROUSERS will be less likely to slip off a hanger if you wind a spiral of adhesive tape around the crossbar as shown above. It will supply just the right amount of friction.

"Pegs" Restore Ruined Antique

I WAS able to buy a fine antique secretary for a song because a former owner had wrecked it by nailing up wobbly joints. Finding it impossible to conceal the nail holes, I drilled them out to a depth of $\frac{3}{8}$ " and filled them with plastic composition wood. I then glued up the piece and refinished it with stain and varnish.

The even rows of filled holes now give it an antique, pegged look that's the envy of friends.—R. L. Clough Jr., Bristol, N. H.



Matchbook Holds Razor Blades

RAZOR blades can be safely stored or carried about in an empty matchbook. Slip one or more behind the striking lip to hold them.—O. S. McCollum, Vaux Hall, N. J.



Bands Lock in Hanging Tools

OUT-OF-SEASON gardening tools hung on paired nails in a garage or basement can be easily dislodged by accident. To safeguard both people and tools, lock the shafts in after hanging them in place by twisting a heavy rubber band across each pair of nails.

Markings on Chisels Show Size

PAINT the sizes of your chisels on their handles and you'll be able to pick out at a glance the one you want. A more permanent method is to use a punch.—Frank A. Javor, North Bergen, N. J.





Mainstays of the Hertz rental fleet. Front row (left to right)—Buick, Ford, Chevrolet. Back row—Cadillac, Oldsmobile, Plymouth

Why does Hertz — world's largest rental fleet — use Champion Spark Plugs?

Operating 15,500 cars and 15,000 trucks, Hertz wants the most power and the most miles per gallon . . . so Hertz uses full-firing Champions!

You can bet that Hertz—world's largest rental fleet—knows all there is to know about spark plug performance and value!

In countries all around the globe—Hertz has put spark plugs through the world's toughest road test. And the fact that Hertz uses 5-rib Champions speaks for itself!

Whatever car you drive—Chevrolet, Ford, Plymouth or any of the

higher-priced makes—take a tip from Hertz . . . use 5-rib Champion Spark Plugs. When you install new Champions, you can immediately feel the difference in your car's response. You'll get quicker starts, faster acceleration . . . and more miles per gallon!

When you need spark plugs, don't settle for anything but the best. Get precision-made 5-rib Champions!

CHAMPION

LOOK FOR THE 5 RIBS



How FORD'S new steering wheel soaks up impact



The statistics: 40% of all driver-injuries in accidents are caused by the driver striking the steering wheel assembly!

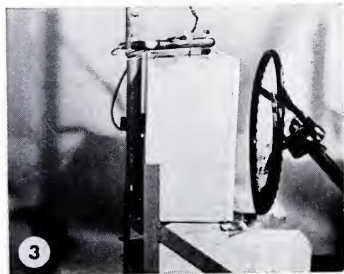
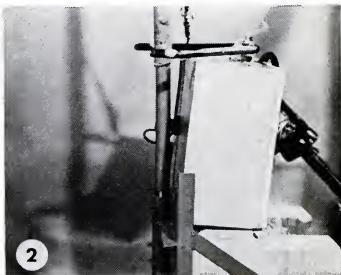
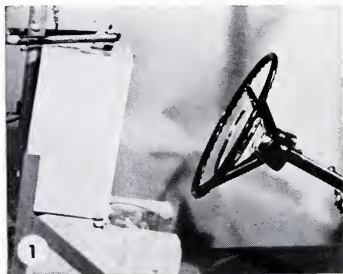
The problem: to develop a new kind of steering wheel that would have a high degree of energy dissipation upon impact . . . protect the driver from the steering post in the event of an accident.

The solution: Ford's exclusive new deep-center Lifeguard steering wheel!

Ford's new Lifeguard wheel, standard on every '56 Ford model, is connected to the shorter steering post by three *equally spaced* spokes. Exhaustive tests show (see opposite page) that in case of impact, the spokes of this exclusive new Lifeguard wheel will bend away from the driver and at the same time, "soak up" force of impact. The driver, with his weight distributed over the rim of the wheel, is thus cushioned from striking the rigid steering post violently in an accident.

FORD Division of

*After more than two years
of testing and research, Ford
comes up with an exclusive new
contribution to driver safety!*



1. Test equipment for impacting steering wheels is shown in illustration No. 1. A mass equal to the weight of the driver is dropped onto the wheel—in this case, Ford's exclusive Lifeguard deep-center design.
2. As block strikes deep-center Ford wheel, spokes yield under impact, absorbing energy as they do so. The force is dissipated before the block reaches steering post.
3. Note in illustration No. 3 the rim has not collapsed but rather the spokes have yielded following the *controlled* direction pattern that helps protect the driver from injury.

FORD MOTOR COMPANY

"—and furthermore, since Mad Man Jerk wants publicity in the newspapers for his Ninety-Day Wonder, I'm inviting the Capitol City *Times* to send a reporter and photographer to cover the story.

"Up to now I've been polite. I've never mentioned the name of the lot that sold me the lemon. But unless this Gus Wilson proves that the Ninety-Day Wonder isn't an A-1 lemon, I'm going to run the jerk who sold it to me out of business. If Wilson *can* fix it and prove to me that the car was all right when I bought it—are you listening, Red Plummer?—I'll give the owner of the lot free plugs for a full year!"

GUS snapped the radio off. In front of the shop there was a screech of rubber as a car pulled up. Johnny Carter came running in.

"Did you hear that!" he cried. "If you can't fix his car, we're both ruined!"

"But I think I can fix his car," Gus said quietly. "And furthermore, I think I can prove that his trouble was entirely of his own making."

"You can?"

"One of my sponsors is Bill's Auto Accessories. He plugs one of their gadgets every week." Gus smiled. "One in particular sticks in my mind. When I heard him advertise it I thought to myself that it made more sense than a lot of them." Gus stopped to get out his tobacco pouch. "But I had a notion at the time that this gadget might, under certain circumstances, cause just the kind of trouble that Gruntzman is having."

Stan said very patiently, "Gus, remember us? What trouble?"

"A short circuit," said Gus. He started to walk to Johnny Carter's car. "Come on, Johnny. You're going to drive me to Bill's Auto Accessories in Capitol City. We'll be back in plenty of time for the broadcast."

AT FOUR-THIRTY that afternoon, there was such a crowd in front of the Model Garage that Jerry Corcoran

and two other state policemen were kept busy directing the parade of radio people, photographers, reporters and curiosity seekers.

Gus was the picture of confidence as the Ninety-Day Wonder sputtered up to him. Grunny Gruntzman got out briskly. He shook hands with Gus, not unpleasantly. Gus noted that, for all his dapper appearance and cocksure demeanor, he had a pleasant, rather sincere face. Gus got the distinct impression that Gruntzman honestly believed that he was crusading against the evils of the second-hand-car racket.

A man with earphones on made a signal to Gruntzman. The disc jockey took the microphone. He spoke briefly, outlining what was going on.

"And now," he concluded, "I'm going to turn the proceedings over to Gus Wilson of the Model Garage." Gruntzman handed the microphone to an announcer, who held it before Gus.

Gus said quietly, "Start the car." Stan Hicks jumped in and the motor turned over and then idled. The uneven rhythm was immediately evident. The announcer held the microphone close to it.

"And now," Gus said, as all eyes turned in his direction, "I am going to call upon my Ninety-Day Wonder expert to handle this problem." He looked into the crowd and his eye fell on four-year-old Molly Sturgess.

"Will you come over here, Molly?" he called. There was a stir in the crowd. Grunny Gruntzman's face began to get very red. Johnny Carter's eyes nearly popped from their sockets.

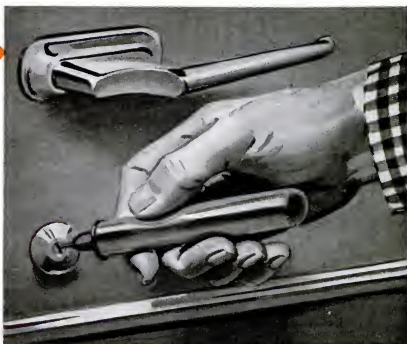
"TURN off the motor, Stan," directed Gus. "And then come out and lift the hood." While this was being done, observed, photographed and noted down, Gus bent down and whispered into Molly's ear. So interested was everybody in what was being done to the Ninety-Day Wonder that they didn't notice Gus's brief conference.

[Continued on page 254]

Texaco Tips On Car Care

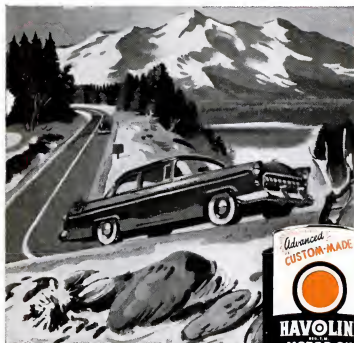
How to prevent door locks from sticking

Occasionally, door locks on your car may tend to freeze up or stick, be difficult to open. Here's a simple way to keep them "easy to open." Squeeze powdered graphite in a tube directly into the keyholes. Also, in very cold weather, condensation inside lock may cause freezing—try heating your key lightly by match-flame, insert in lock and repeat if necessary to "soften" up jammed tumblers. Do not force key.



How to assure top engine power

On the road, you want the very best from your engine. Be sure to get it with *Advanced Custom-Made Havoline*—the motor oil that out-performs all others, regardless of price! Tested against the toughest motor oil competition on the market, *Havoline* proved its superiority. *Havoline*-lubricated engines delivered full power, used less gasoline and oil, stayed far cleaner. For top power and protection, change now to *Havoline*. See your Texaco Dealer, the best friend your car has ever had.



TEXACO DEALERS IN ALL 48 STATES

Texaco Products are also distributed in Canada and in Latin America



TUNE IN: TEXACO STAR THEATER starring JIMMY DURANTE, on TV Saturday nights, NBC. Metropolitan Opera radio broadcasts Saturday afternoons, ABC. See newspaper for time and station.

"Now," said Gus, "if you people will step back from the engine, my little expert will go to work." Molly climbed quickly up on the front bumper, leaned over under the hood, busied herself for a brief moment with her two little hands, withdrew her head and ran back to Gus. It was done so quickly that even the announcer didn't get over to see it.

"Start the engine again," Gus said.

This time the motor sounded smooth, even, regular. A burst of spontaneous applause went up from the crowd. The announcer rushed up to Molly.

"What did you do, honey?"

Gus interposed. "Trade secret," he said. "Isn't it, Molly?"

"Yes, Uncle Gus."

At this point Grunny Gruntzman proved himself not only a good sport but a good showman as well. He grabbed the microphone from the announcer.

"Folks," he said, "that gnawing sound you hear is your old friend Grunny Gruntzman eating his words. I guess I owe a year's free plugs to a certain second-hand-car dealer and I might as well give him the first one right now. Come over here, Johnny. Guys and chicks, I want you to meet an honest dealer. His name is Johnny Carter. And if I have anything to say about it, he'll be manager and owner of a new car agency in Capitol City before long. Johnny, I'm sorry for all the trouble I've caused you."

Johnny's face was red. He muttered awkwardly, "It's okay, Grunny. Thanks a lot."

GRUNTZMAN beckoned to Gus. "Folks, I want to introduce the proprietor of the Model Garage. Gus, tell us now, what did you—I mean your expert—do?"

"You've been a good sport, Mr. Gruntzman," Gus said, "so I'll be one, too. When you got your car winterized, Johnny Carter tied a card with a piece of wire to your radiator hose. The card told how much antifreeze you had. After he

had done that, and *before you left his shop*, you had one of his mechanics install a metal support to the underside of the radiator hose. It was a gadget known as a Hosupport."

"That's right. But I don't see—"

"You undid the wire on the card so that the Hosupport could be installed, and then you tied it back on. Right?"

"Yes, but—"

"That's when your troubles began. Shortly after you started your engine, the fan blew the card and wire back until they were right beside the generator. The fluttering of the card caused the wire to come in contact with the generator. Being attached to the metal Hosupport, it caused a constant short circuit."

"All my expert did was to take off the card and the wire."

One of the radio engineers was making signals to Gruntzman. The disc jockey nodded. "Guys and chicks, this concludes the Grunny Gruntzman show for today. I hope some of you will have learned as good a lesson as old Grunny has. Don't jump to conclusions. So long!"

THE radio men began gathering up their equipment. The crowd drifted away. Gruntzman was talking with Johnny Carter about the free plugs he was going to give him. Suddenly the Ninety-Day Wonder began to choke and sputter, and then it died altogether. Stan Hicks looked at Gus. Gus looked at Gruntzman. Gruntzman, his face becoming crimson with anger, looked at Johnny Carter.

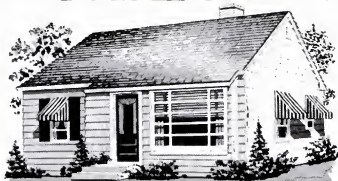
"For crying out loud! There it goes again! I've been swindled again! I—"

"Hold on, Gruntzman," Gus said sternly. "Remember your advice to your listeners. Don't jump to conclusions. I suggest that you look at your gasoline gauge."

The disc jockey did so. He looked up, his face sheepish. "I'll be darned," he said. "Out of gas. Which," he added, "just about describes me!" END

NEXT MONTH: Gus drives a bad bargain.

This ALADDIN Read-Cut House



delivered to you

\$1985

Slightly Higher West of Missouri River

BUILD IT YOURSELF and SAVE!

All Aladdin Houses come to you with lumber cut to EXACT size and each piece plainly marked. You get easy-to-understand drawings and instructions so you can't go wrong. It's fun to build, and you SAVE up to 50% on the cost. Aladdin has

YOU SAVE UP TO 30% ON

Your ALADDIN comes to you ready to nail together—you don't waste time measuring and cutting each piece of lumber. All that has been done by precision machines at our mill. That's why it fits together perfectly—why it takes less time and labor to build. Even if you hire a carpenter to help, his time is not spent in measuring and cutting. Aladdin's Read-Cut System eliminates waste. No short ends are left over that cost you money. No wonder thousands of people WITHOUT any carpentry experience have built their own Aladdin Homes and saved thousands of dollars.

WORLD'S LARGEST MANUFACTURER OF READ-CUT HOMES



WHAT YOU GET WHEN YOU BUY AN ALADDIN HOUSE

- ALL THE LUMBER accurately cut to fit, marked and numbered ready to erect practically without use of a saw.
- SIDING
- MILLWORK
- FLOORING
- WINDOWS
- DOORS
- TRIM
- COMPLETE DRAWINGS & INSTRUCTIONS
- MOULDINGS
- HARDWARE
- PAINT
- GLASS
- NAILS
- ROOFING

been manufacturing read-cut houses for 50 YEARS. Only the finest materials are used and all lumber is guaranteed THOROUGHLY DRY. 120 plans to choose from in 5 to 8 room modern styles. IMMEDIATE DELIVERY

LABOR—18% ON WASTE!

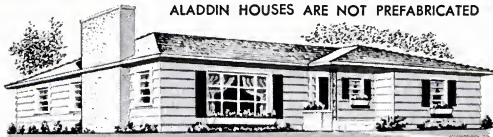


BUY DIRECT from the Manufacturer
SAVE Agents' & Dealers' Profits

WHAT READ-CUT MEANS!

The tedious work of measuring, sawing, mitering, and fitting has been done in our mill, assuring you of a perfect fit of all parts. Aladdin Houses are designed to meet the most exacting building standards. Our expert designers and engineers never offer a home to the public until every construction detail is carefully checked. Aladdin Homes are modern in design and plan arrangements. Write for your catalog today. 120 PLANS TO CHOOSE FROM

ALADDIN HOUSES ARE NOT PREFABRICATED



EXCITING NEW HOME DESIGNS FOR 1956!

SEND 25¢

for Beautiful, New,
Full Color
72 Page Catalog

MAIL THIS
COUPON TO
**THE ALADDIN
COMPANY**
BAY CITY, MICH.

Name

Street

City State

EM-19

"Black Box" Points Way to Oil and Gold

[Continued from page 119]

gions are finding, conversely, that uranium can serve as a "tracer" to lead them to the yellow metal. A higher-than-normal reading of radioactivity on the scintillation counter, in this case, tells them where to dig.

In this way a group of prospectors, exploring radioactive "hot spots" in the black sands of French Guiana, recently located thousands of dollars' worth of gold. During a visit to New York they gratefully reported their success to M. M. Reiss, former Atomic Energy Commission physicist and president of The Radiac Company, which supplies scintillation counters and other tracer-prospecting and atomic equipment.

Not long ago the Radiac people received an order for a scintillation counter by long-distance phone, from the mayor of a large Florida city. With its aid, he was going to explore his property for thorium, which like uranium can be detected by its radioactivity. He didn't find enough thorium to be worth exploiting. But he did find substantial quantities of valuable titanium, often found together with thorium, and his ore is now being actively mined.

Similarly, the radioactivity of uranium has led hunters with scintillation counters to important associated deposits of silver, tin, vanadium, nickel and bismuth.

The most striking success of tracer prospecting, in this country, has been as an aid to searchers for oil. When a subterranean oil formation lies beneath terrain explored with a scintillation counter or supersensitive Geiger counter, the instrument usually reveals a peculiar and characteristic pattern of radioactivity.

Directly over a hidden oil pool the instrument registers abnormally low radioactivity. But at the border of the oil formation the needle climbs to show higher radioactivity than normal.

Above an oil formation of the kind geologists call a closed dome, the high-level border, or "halo," is circular or elliptical, encircling the area of low radioactivity. Carry a counter by car or

afoot squarely across the formation, while a recording attachment continuously charts its readings, and the graph looks like a cross section of a volcanic crater. The raised rim corresponds to the radioactive halo. The central depression—of low-level radioactivity—marks the most likely spot to drill for oil.

Elsewhere the bordering halo may take the form of an extended pair of wavy lines, with a low-reading area between them. Typically this indicates a buried stream bed that is filled with oil or gas.

Of course, oil formations are not invariably signposted in such ideally clear-cut fashion. Various geological compli-

.....

The man who shoulders his responsibilities has no room left for a chip.

—THE SIDEWALK SUPERINTENDENT

.....

cations can alter and partially mask these simple radioactive patterns. But when readings of radioactivity are taken systematically at measured intervals, usually the pattern "shines through."

Properly the counter's verdict does not replace, but supplements and confirms, other signs of oil familiar to trained geologists. Even so, experts are apt to feel as if they had been looking for oil blindfolded, when they first see the "scint" in action.

Practical-minded prospectors, taking advantage of this scientific divining rod, are hastening to cash in on the new technique.

Helicopters skim the ground at 300 to 500 feet, taking scintillation-counter readings to map radioactive abnormalities. Four-wheel-drive trucks make spaced runs at 10 m.p.h., bearing instruments that record surface radioactivity continuously on moving tape, driven by the speedometer cable. And the charts that result are enabling the surveyors to tap new wealth in mineral treasure.

END

APPROXIMATELY

22 DIFFERENT BRANDS OF SANDERS TO CHOOSE FROM

*
Maybe
More
Any
Day!



"Mine is Best!"
"No—My Sander is Better!"
"Don't Believe Their Claims!"
"Ours Sands Perfectly!"
"X-Sander is Cheaper
and Better!"

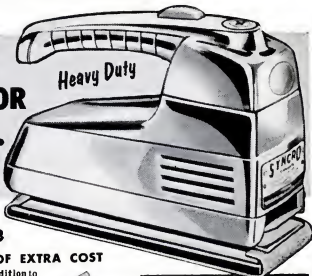
14 13 12 11 10 9 8 7 6 5 4 3 2 1

15

WHICH IS THE BEST SANDER FOR YOU ... ?

Professionals claim it's the sanding pad motion that counts in surface removal. Today's army of over 22 sanders use 1 of 4 different "motions"! Which motion will do that sanding job *best* in your home *away* from advertising claims and salesmen? We say exclusive Syncro MULTI-MOTION will *BECAUSE*—most wood grain being naturally crooked and irregular—only Syncro "Multi-Motion" sanding pad action can sand *with* such grain and completely *finish* the *whole* surface! See for yourself—accept our sporting offer shown below—and get your *next* home sanding job done *without* having to buy *any* sander!

**RENT—TRY THIS SANDER ON
YOUR OWN JOB...RETURN FOR
PROMPT RENT FEE REFUND...
OR BUY IF IT SATISFIES YOU!**



SEND NO MONEY

DO THIS: (1) Send coupon, your tool dealer name, address—we'll ship No. 900 Sander, Sanding Handhook, Sandpapers to you. (2) Pay postman \$20 (10 days rental fee), COD fee, postage charge, on arrival. (3) Use sander 10 days, return it prepaid—we'll refund your \$20 promptly. (4) To buy it, pay dealer (named on coupon) balance of \$19.95. Send us *receipt of purchase* from dealer, we'll ship you \$3 worth of sandpapers as our Gift! (OFFER ENDS JULY 1, 1956.)

Just
Mail
This



TO: SYNCRO CORPORATION
Dept. 2-26, OXFORD — MICHIGAN — U.S.A.

Send me Syncro #900 Sander COD on 10 Day Rent Fee Refunded Offer. Within 10 days after Rental Period I may either (1) return Sander prepaid to factory only (Syncro Corporation, Oxford, Mich.) for prompt \$20 refund. Or (2) I may pay dealer direct (named below) balance of \$19.95 and I will own Sander. Offer ends July 1, 1956.

Name of Hardware Store or Tool Dealer:

ADDRESS _____

MY NAME _____

ST. & NO. _____

CITY _____ ZONE _____ STATE _____

(Offer Good Only In Continental U.S.A.)

Free

OF EXTRA COST

In addition to the Free Sandpaper included with your Rental 900 Sander, if you buy sander after trying on this offer—send us receipt of purchase from dealer, we'll ship you \$3 worth of sandpaper FREE.



DEALERS WRITE!

Dealers write on letterhead for complete Rental Sander details... for entirely different store-operated "Rent or Buy" Plan that can increase sander sales 60% at Full Dealer Profits!

Don't buy before you try

SYNCRO
SAWS AND SANDERS

"900" SANDER FACTS

Outlasts and outsands others, Jump-Free. Easiest of all to use. Exclusive Multi-Motion sanding pad action. Heavy-duty. Guaranteed against burn-out during rental use and ownership. Full 6 months Warranty. Retail Price only \$39.95.

**SYNCRO POWER UNITS
GUARANTEED
AGAINST BURN-OUT DURING
YOUR OWNERSHIP OR
REPLACED FREE!**

©
SYNCRO
CORP.
1956

SYNCRO CORPORATION, DEPT. 2-26, OXFORD, MICH. U.S.A.

roomful of mathematicians busy for a week. That means that if your engine behaves in ways you haven't anticipated, you can change your testing pattern at once. Simultaneously, to keep the boys back at the home factory happy, the obliging machine will send them a teletyped copy of its findings.

Next door to the four-cell Engine Test Facility, scale models of experimental missile designs are beginning to be put through what AEDC calls its Gas Dynamics Facility. The hypersonic tunnels used here are comparatively small. They have to be, because wind velocities of from four to 10 times the speed of sound call for fantastic quantities of air, even in a model-testing cell.

Steel bottles. To feed the Gas Dynamics Facility's most spectacular units—two 7,600-mile-per-hour tunnels that are not yet finished—air at a pressure of 4,000 pounds to the square inch will be stored in a steel bottle nearly four city blocks long, four feet in diameter, and weighing one ton to the running foot. Not far away, exhausters will bleed the air from a steel sphere as high as a seven-story office building.

Between the two steel tanks, a model of the missile to be tested will be set up facing an hourglass-shaped nozzle whose waist is only 1/16 of an inch wide at its top velocity setting.

When dispatchers open the valves between the two tanks, the midget rocket will be in for 15 minutes of the world's fastest simulated flight.

The big wind. In addition to the Engine Test and Gas Dynamics plants, there's a third showpiece at AEDC—a "Gee Whiz" item that they save for us visiting firemen until last.

That's the Center's huge Propulsion Wind Tunnel: two still-to-be-completed rectangles of pipe spread over 600 acres. Their ducting reaches the incredible diameter of 60 feet at the testing zones.

One rectangle will be used to set up transonic velocities for full-size rockets, and for jet engines nested in their fuse-

lages. The other will take the same sort of equipment and give it a 2,500-mile-per-hour supersonic treatment.

To set up this flow of air, 300 freight-car loads of motor and compressor parts were hauled into Tullahoma last year. They are not all assembled yet. But when they are, they will form the world's biggest single rotating machine, nearly as long as two football fields.

At one end, the two most powerful electric motors ever built, 83,000-horsepower versions of the little synchronous jobs found in electric clocks, will be kicked over and brought up to speed by

.....
The most important mistakes to correct are those that you feel sure you can get away with.

—THE SIDEWALK SUPERINTENDENT

.....
a pair of 25,000-horsepower starter motors. It will take eight minutes for this formidable power train to reach its 600-r.p.m. operating speed. When it does, its four motors will use more juice than a city the size of Nashville.

Cooling them off. At the other end of the shafting, a battery of air compressors weighing 7,000 tons, or as much as an antiaircraft cruiser, will soak up the 216,000 horsepower. Approximately 100,000 gallons of cooling water a minute, pumped from a 5,000-acre reservoir, will carry away the heat that these compressors generate.

If for some reason the main power lines at AEDC should ever go down, making it impossible to stop the huge rotating parts with electric braking, built-up momentum would keep it running for 50 minutes. During that time, with the water pumps shut off, much of the equipment would be burned to a crisp. But it will never happen. The Center's standby generators would cut in instantly. And with the driving motors converted into the world's biggest power brakes, the monster machine would be brought to a safe stop in three minutes. END

THERE'S A NEW YOU IN THIS PICTURE!

• **SHOPSMITH**
gives you new skill!

• **SHOPSMITH**
gives you new
satisfaction!

• **SHOPSMITH**
gives you new
versatility!

You're bound to do better woodworking with SHOPSMITH. Its Speed-Dial automatically gives you correct tool speeds. Its built-in jigs give positive accuracy. Its changeability gives you exactly the right tool for any sawing, sanding, drilling or lathe job.

You'll have the satisfaction of seeing jobs through to completion with the one tool that can take you step by step—from the first saw cut to the finished sanding.

You'll be equipped for any job—from building toys and play-yard equipment to remodeling or adding complete rooms—at savings of 20-60% (more than enough to pay for SHOPSMITH).

• **SHOPSMITH—**
gives you
new pride!

You'll be proud owner of the finest, most modern home workshop tool—a masterpiece of functional machine design (compare it with modern industrial tools). Its polished, precision parts are held to tolerances as close as .0002".

Now you can own SHOPSMITH for as little as \$3 per week on Magna's Tool-Time Plan

See the new SHOPSMITH® Mark 5 demonstrated at leading hardware or department stores or any Montgomery Ward store. See how it converts in less than 30 seconds from a 9" circular saw to a 12" disc sander, 34" lathe, 16" drill press or horizontal drill.

Power Mount makes it easy to add Magna's new 18" jigsaw or 4" jointer. See the Speed-Dial you simply dial to select the right speed for the job. SHOPSMITH comes ready to plug in, with built-in ¾-hp. motor, bench, chrome rustproofing — \$289.50



3 FREE BOOKS

1. "Project Digest," 36 project-packed pages.
2. "What to Look for When You Buy Power Tools," valuable shop guide.
3. Illustrated 20-page SHOPSMITH catalog.



MAGNA POWER TOOL CORPORATION

Dept. 317-A, at factory nearest you:
Box 2808, Fort Wayne, Ind., OR Menlo Park, Calif.

I'm interested! Please rush me the three free books and name of my nearest dealer.

Name

Address

City State

Care and Feeding of Engines



BY
S. P. CORP

BRAKE SQUEAL

To silence squealing brakes, remove the brake drum and inspect the brake shoe to remedy the cause of vibration which produces the squeal. 1. Move shoe toward brake backing plate, noting clearance of guide, which should hold shoe square. If cam pin is too long, throwing shoe out of alignment, file pin until shoe moves in line with center of wheel cylinder. Check guide to see that it is not forcing shoe away from backing plate. Lubricate guides with a thin coating of Lubri-Plate. 2. Check for a bent brake shoe by laying web of shoe on a flat surface plate. It should contact plate for full length of shoe. 3. When assembling, make sure brake shoe fits anchor pin snugly. If there is clearance, replace shoe.



BRAKE SHOE

VALVE SPRINGS

Valve reconditioning should always include these important checks on valve springs: Compare with a new spring for length, discarding any which are more than $\frac{1}{8}$ " shorter than new spring. They have lost tension. Check squareness of spring ends. A distorted spring will cause trouble. Look for cracks, checks or pitting, discarding springs which show such damage. Rusty springs should be cleaned. Check under load for correct spring height. A load of 80+ should compress spring to $1\frac{1}{2}$ " in height. Get manufacturer's specifications from car dealer. Place right end up. If coils are closer together at one end than the other, install with tight coils toward head of valve, otherwise spring will break in operation. Replace all springs if they have been used a long time.



RIGHT WRONG

THIS FREE MANUAL IS FOR YOU!

To get this free illustrated manual of car care, just send your request on a postal card. You'll find dozens of detailed instructions on how to make repairs and adjustments. And when you re-ring, insist on Sealed Power Krome-X Ring Sets—for fast break-in, more power, greater oil economy, and longer life. Your dealer has them or can get them for you. Sealed Power, Dept. H-2, Muskegon, Michigan.



Sealed Power

PISTON RINGS

MARLITE-IT-YOURSELF



a few days ago,
this was a dingy basement!

... but economical Marlite Plank and Block made the beautiful difference. This easy-to-handle paneling makes week-end projects out of week-long jobs. The exclusive tongue and groove joint simplifies installation: conceals all fastening. And Marlite's melamine plastic finish never needs painting. Dirt wipes off with a damp cloth.

Send 10c today for do-it-yourself instructions and full-color folder with over 40 "idea" rooms using Marlite "Companion Colors" and distinctive wood and marble patterns. . . or see your lumber dealer, Marsh Wall Products, Inc., Dept. 226, Dover, Ohio.

Marlite®
plastic-finished
WALL and CEILING PANELING

Another quality product of Masonite® research

Red Devil WOOD SCRAPERS



High carbon steel replaceable blades. Hardwood enamelled handles designed for easy holding. Scrapers clean in seconds. A model for every job (blade widths of 2½", 1½" and 1") priced to suit your budget.



FREE

How to Prepare Surfaces for Finishing. Illustrated instructions on preparing masonry, wood and metal surfaces for painting.

Red Devil Tools. Dept. 121
130 Colt Street, Irvington, N. J.

Please send FREE copy of "HOW TO PREPARE SURFACES FOR FINISHING."

NAME _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

1615

Wanted: Marinas for 4,000,000 Boats

[Continued from page 127]

water storage checks fouling and keeps boats from sinking in storms.

A problem at John Kerr Lake, N. C., was solved by a marina owner in an ingenious way. President Sam Pease of the Tar Heel Marina wanted to give his customers shelter from sudden squalls. He also wanted to open a snack bar right down at the waterfront.

He accomplished both by designing something new: a breezeway dock. At one end he built a shop where he rents water skis and motors. At the other end he built his snack bar. Between these is a seagoing breezeway where people huddle during storms.

So today's marinas are a lot more than just boat "filling stations" or old-fashioned boatyards. They rent motors, boats, surfboards. They will even rent you a boat and driver to tow you on skis. The Tar Heel Marina rents fishpoles for 50 cents. You can get laundry service, a shower, ice to keep your fish. In many

marinas you pay from \$2 to \$15 a month for boat parking.

Good marinas make money. Bill Walker, in Virginia, started with about \$7,000 that he and his wife had saved. Today, six years later, he's worth \$60,000. An-

.....

A man is as old as he feels on a beautiful weekend.

—THE SIDEWALK SUPERINTENDENT

.....

other marina owner told me that he expected to sell 60 boats and 60 motors this year for a gross profit of \$16,000.

But new marina gimmicks are coming fast. Some are opening "boatels."

At John Kerr Lake, Sam Pease has another idea: he's putting in ship-to-shore radio. Now you can phone the marina from your outboard boat and say:

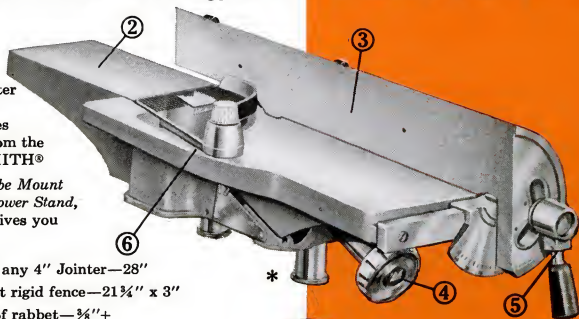
"Tell my wife the fish are biting and I won't be home until tomorrow!" END

Here's that new MAGNA JOINTER

This big Magna Jointer has all the built-in precision and features that you'd expect from the makers of SHOPSMITH®

***Exclusive Twin-tube Mount** for bench, Magna Power Stand, or SHOPSMITH. Gives you Instan-Tension.

- ② Longest table of any 4" Jointer—28"
- ③ Largest and most rigid fence—21 3/4" x 3"
- ④ Greatest depth of rabbet—3/8"+
- ⑤ Single knob fence control—3 auto-stops
- ⑥ Safety-taper, Micro-Adjustable Knives



MAGNA

POWER TOOL
CORPORATION

Manufacturers of
SHOPSMITH

Only \$49.95. Ask your dealer about Magna-Tool-Time Plan. See the new Magna Jointer demonstrated at leading hardware and department stores or any Montgomery Ward store. For free literature write Department 319-A, Magna Power Tool Corporation, Box 2808, Fort Wayne, Indiana, or Menlo Park, California.

grips like a pipe wrench

**a cinch
to handle**



CHAN NEL LOCK

No. 420

Terrific gripping power on any shape $\frac{1}{8}$ " to $1\frac{3}{4}$ " size. Long and streamlined . . . easy to use in hard-to-get-at places! Some of the reasons why Channellock is the favorite plier of craftsmen everywhere. And Channellock will be your favorite, too . . . for the same reasons. No other plier does so many jobs so well. Ask your hardware man for a Channellock No. 420.

BE SURE IT'S A GENUINE CHANNELLOCK



CHAMPION DEARMENT TOOL CO. MEADVILLE, PA.

Corvette Challenges Thunderbird, Hawk

[Continued from page 139]

Ford slide-rule virtuosi were thinking about Chevrolet when they gave the Thunderbird a quick going-over for 1956. Starting with a car that was, in its field, selling like ladders in a burning building, Ford left the styling alone except for some minor matters: A Continental-type spare-wheel carrier rides the back now, and window wings and ventilators in the body have improved the cockpit cooling.

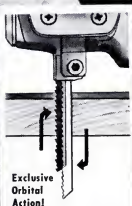
T-bird's new view. You can also have nice round Queen Mary type portholes in your hardtop if you like. It's a free option, although it costs Ford about \$27.

All of Ford's safety equipment is available, of course. The new upholstery is firmer and you can now put a passenger in the middle of the seat over the tunnel without risk of being sued for cruel and inhuman treatment.

As before, there's a three-way engine-and-transmission choice. With the standard transmission, you get the 292-inch engine, running at 8.4:1 and delivering 202 horsepower at 4,600 r.p.m. With overdrive, 312 inches, same compression ratio, 215 horses. Fordomatic, 312, 9:1, 225 hp. For comparison, last year's Fordomatic delivered 198 horsepower out of the 292-inch engine.

In five or six miles of dusk-time motor-ing around the streets of Dearborn, during which, if anyone is listening, we did not do 81 miles per hour, the Thunderbird seemed to this reporter to be slightly more taut and firm than last year's. It has more of an all-in-one-piece feeling, and I believed the man who told me that the chassis is slightly heavier now. Other than that, it handles like the '55, which is to say that it handles well. The front suspension is unchanged, the rear springs are some three inches longer and the shocks have been recalibrated to put up a bit more fight. They've gone and raised the steering ratio from 20 to 23 to 1, however. Customer demand, the man said. (Chevrolet buyers must have quicker reflexes, because the Corvette is a snappy 16 to 1.)

[Continued on page 264]



Blade moves ahead on upward cutting stroke—moves back $3/64$ " on downward relief stroke. No harmful "drag"—blades run cooler, last far longer—cutting speeds increase up to 4 times!

New! Just \$99⁵⁰!

World's only orbital-action bayonet saw!

Now—the first *real* improvement since portable jig saws were invented! It's Porter-Cable's revolutionary new Model 148—designed around a wholly new principle, *guaranteed to outperform any other portable jig saw at any price.*

Orbital action makes the difference. Blade teeth are in contact *only* on the cutting stroke—*back away* on the relief stroke. Harmful "drag" is completely gone—and performance reaches a new high.

By actual test, the Model 148 cuts up to 4 times faster than the best conventional up-and-down saws. It has a full 2" capacity in wood— $3/4$ " in aluminum, $1/4$ " in steel. Its cool, comfortable grip and perfect balance make easy work of any job. Get the whole amazing story from your Porter-Cable dealer—or write today for full information and name of your nearest Dealer.

Porter-Cable

Quality Electric Tools

PORTER-CABLE MACHINE COMPANY
6152 N. Salina Street, Syracuse 8, N. Y.

belt sanders • finishing sanders
saws • drills • routers • planes

In Canada, write Porter-Cable, Ltd., Box 5019,
London, Ont. Canadian prices slightly higher.

Corvette Challenges Thunderbird, Hawk

[Continued from page 262]

Getaway. You don't need a dynamometer to notice the presence of the extra 27 horses, and the '55's 0-60 time of 11.1 seconds should be down a peg or two and everything else with it. The T-bird and the Corvette should run closer together than half-past six, the Corvette in front by a thick whisker. Still, they may both get a good look at the squared-off tail of the new Golden Hawk Studebaker when it comes to take-off.

The Hawk is a blue chip going down on Studebaker's bet that there are customers waiting for a sports car, or a sports-type car, that will carry more than two people. The Golden Hawk is a full five-passenger sedan. Power plant is the big (352 inches) Packard engine, putting out 275 horsepower and 380-foot-pounds of torque at 2,800 r.p.m. The Hawk has the highest power-to-weight ratio of all U.S. production cars, and the factory frankly states that it was designed to run away from everything else in the country. Will

it? Probably. It does 0-30 in 3.9 seconds, 30-60 in 5.4, and 0-75 in 15.1. If that isn't quick enough for you, you must own more life insurance than I do.

This is a small car—17 feet long, six wide, a couple inches under five feet high—and it looks a good deal more like the '55 Speedster than does the rest of the South Bend line, which is conventional and big. Incidentally, Raymond Loewy says that he designed it, and Studebaker-Packard says that he didn't, that William Schmidt did. Whoever did, it's a good-looking automobile.

Eyebrows, wings, fins. The grille is all new, a squared-off, Ferrari-like, cookie-cutter type, flanked by a pair of typically Studebaker eyebrow-shaped air intakes. There's an air-scoop bulge on the engine lid but it's a dummy. A couple of pretty big parking-and-signal lamps sit high on the front wings, effectively lousing up a nice line, and the rear wings

[Continued on page 266]

IT SMELLS GRAND



SMELL IT! YOU'LL SAY "THAT'S FOR ME!"

IT PACKS RIGHT



CUT TO PACK IDEALLY!

IT SMOKES SWEET



JOY YOU'VE DREAMED OF — YOU'LL AGREE!

IT CAN'T BITE!

SIR WALTER RALEIGH'S BLEND OF CHOICE KENTUCKY BURLEYS IS **EXTRA-AGED** TO GUARD AGAINST TONGUE BITE.



FREE!

24-PAGE BOOKLET ON PIPE CARE. JUST WRITE TO: SIR WALTER RALEIGH, DEPT. H6, LOUISVILLE, KY.

It Becomes Something Special to Her Because You Built It Yourself



Convert SKIL to a tilting arbor table saw with optional SKIL table. \$39.95



Make cabinets, cupboards, closets, an easy weekend project with SKIL Saw!

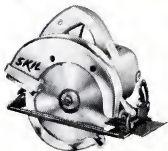


Extra rooms, extra storage space are easy to build with SKIL Saw!

There's a real thrill in finishing those big jobs you've dreamed of doing. There's an extra satisfaction that comes with the family's pride in your ability. Many projects you could never handle before are *easy* with SKIL Saw to help you!

This speedy, powerful 6" SKIL Saw has all the features professional builders demand for peak performance and efficiency. So simple and safe to operate, a boy can handle it. You'll do all kinds of home workshop jobs—from simple furniture-making to construction of a garage or porch!

What's more, this SKIL Saw is priced so low you can own it easily! Have your hardware dealer, appliance dealer or department store show you this outstanding SKIL Saw value today!



Model 526

Only

\$49.95

Cuts through plywood, sheathing, siding, even stone and metals! Lightweight and easy to handle. Built-in bevel and depth adjustment for accurate cutting. Automatic blade guard and trigger-type switch for safety. Powerful motor; sturdy die-cast aluminum housing.

Send for Valuable Chart. Shows You How to Build Kitchen Cabinets! Only 10¢!

**SKIL Corporation, Dept. PS-26
5033 Elston Avenue, Chicago 30, Illinois**

I enclose 10¢. Please send me SKIL Chart 105, a step-by-step guide that tells how to modernize my kitchen by making built-in cabinets.

Name

Street

City Zone State

SKIL

BUILDERS TOOLS

Made only by SKIL Corporation formerly SKILSAW, Inc.
5033 Elston Avenue, Chicago 30, Illinois
3601 Dundas Street West, Toronto 9, Ontario
Factory Branches in ALL Leading Cities

FEBRUARY 1956 **265**

No Sanding! No Finishing!



Lay it
right over
your old floor

Bruce PREFINISHED Oak Floors

BLOCK, STRIP OR RANCH PLANK—Now it's easy and economical to give your home the new beauty of modern oak floors...with all the glamour of nationally-famous Bruce Prefinished Hardwood! In only a few hours, your living room, bedroom, dining room—or that unfinished room upstairs—will glow with a style as modern as tomorrow. You can choose Block, Strip or Ranch Plank design.

It's EASY! These floors are completely finished—even waxed—at the factory. Just cover old floor or smooth subflooring with felt paper and nail down this highest quality oak (or install in mastic over concrete). No sanding or finishing...no mess or smell. Ready for use as soon as it's laid...and your home will have the rich style and beauty chosen by leading decorators.

It's ECONOMICAL! A new Bruce Hardwood Floor will cost you less than a good rug or carpet...and will last the life of your home. The famed Bruce "Scratch Test" proves this durable finish doesn't scratch, chip or mar. Ask your lumber dealer for an estimate. Mail coupon below for colorful literature.

MAIL FOR LITERATURE

E. L. Bruce Co., Box 397-F, Memphis 1, Tenn.

Send me complete, free information on prefinished Bruce Hardwood Floors.

Name.....

Address.....

City..... State.....



Bruce Hardwood Floors

Product world's largest hardwood flooring maker

Corvette Challenges Thunderbird, Hawk

[Continued from page 264]

have the fin-type bulges that are getting to be as standard as four wheels on U.S. automobiles.

The nicest instrument panel available on an American car today is the Golden Hawk's—round, white-on-black instruments set in a machine-turned metal facing and all eight of them clearly visible through the T-spoked steering wheel, the speedometer, vacuum gauge and tachometer most prominent.

Hawk flies low. Only a prototype was available for driving in South Bend when I was at the proving grounds a couple of weeks before the Hawk was released, and it was a bit heavier than the standard 3,440 pounds. Manual shift with overdrive is regular equipment, but this car had the optional dual-range Ultramatic, an inoperative tachometer and signs of a lot of use. Therefore the acceleration figures I obtained—on a fifth-wheel speedometer—are impressive.

This is a fast automobile by any standard in the world. It needs big brakes, and has them: 195 inches of brake area in finned drums, 11 inches in front, 10 in the rear. Safety door latches are standard equipment, seat belts and dash padding optional.

Solid and sure-footed. Suspension is Studebaker standard. It feels slightly stiffer than normal. The Golden Hawk is a solid, sure-footed car, a pleasure to handle. Even in an absurdly tight corner it showed no lethal tendencies, no rear-end determination to leave the county, no more roll than it was entitled to. With only the driver aboard, it felt nose-heavy to this observer, but with the family in the back seat and three or four sacks of uranium ore in the trunk it would be as on the level as a church fair.

For \$2,850 bare at the factory or \$3,673.82 with every extra in the catalogue, including wire wheels, this is quite a buy, indeed. The Golden Hawk is the best answer available for the character whose wife won't allow a sports car in the family garage because it has no room for the kids.

END



Engine Sluggish? Lost Power? Poor Pick-up? Eats Oil?

Smooth Engine Power calls for Quality Bearings . . . **FEDERAL-MOGUL QUALITY!**

Engine performance starts at the connecting rod and crankshaft bearings. These are the vital points where gasoline explosive force is converted to turning power. Bearings take the impact, carry the load of variable driving conditions. They meter oil and control the flow of lubrication for cylinder walls and rings. Replacing with Federal-Mogul QUALITY bearings restores lively traffic response, smooth power on highways and hills, gas and oil economy, freedom from power-stealing oil pumping!

FEDERAL-MOGUL SERVICE
FEDERAL-MOGUL-BOWER BEARINGS, INC.

Ask your
mechanic!



RESEARCH • DESIGN • METALLURGY • PRECISION MANUFACTURING • SERVICE

FEBRUARY 1956 267

they would blow away in a few days. Now, even an expert studying a finished house may find it difficult to tell if it was factory made or built conventionally.

Bowing to the public, many manufacturers never use that word "prefabricated." Instead, they say that their houses are "pre-cut," "pre-engineered," or "produced on the assembly line."

There are flaws in prefabs which have not wholly disappeared yet. The small models are usually designed for slab construction and sometimes are difficult

.....

Money is like knowledge—the more you have of it the less you need to talk.

—THE SIDEWALK SUPERINTENDENT

.....

to get with basements. Household storage space is limited in some models.

Inside walls are not overly sturdy in some of these homes. Factory-assembled walls are often just two-by-twos covered with $\frac{3}{8}$ " gypsum board, as compared with the two-by-four framing and half-inch gypsum that are generally used by conventional builders. A wall that gets the shakes whenever you slam a door can become quite annoying.

Prefab prices vary from city to city. A model that is low-priced in one place may be over-priced elsewhere.

The house package that is shipped from the factory usually costs only about 40 percent of the price the buyer pays. The other 60 percent of the purchase price covers work done at the site and marketing costs. Since labor costs and the efficiency of local builders vary so much in different places, it is impossible for a manufacturer to tell you quickly exactly how much one of his houses will cost when it is erected on your site. A shopper must find that out by discussing prices with his local dealer.

The prefabbers, nevertheless, are moving ahead. They already have about 15 percent of the market. In a few years they expect to be producing most of the new homes built. END



TAKE THE "IRK" OUT OF WORK . . .

clean up scores of sanding, polishing and finishing jobs fast—with professional results

WELLER POWER SANDER

Try your hand with this premium power sander. It's the most useful addition you can make to practical tools that get your work done faster and with results you'll be proud of.

The comfortable, compact design fits snugly in your hand. It responds perfectly to precision work, and it is practically impossible to stall.

Straight-line action sands with the grain, gives satin smooth finishes and flawless feathering with no bucking or twisting. Using a polishing cloth, the fast 14,400 strokes per minute give an expensive, high-gloss finish to any waxed surface. The Weller Sander-Polisher never needs lubrication.



**COMPLETE WITH ASSORTED SANDING
PAPER AND POLISHING CLOTH . . \$14.95**

Ask your Hardware Dealer for a demonstration or write
direct for literature.

Weller

ELECTRIC CORP.
806 Packer Street
Easton, Penna.

As little as \$53* (full price!) buys a 1956 CHRIS-CRAFT Boat Kit!



SPORTS
UTILITIES

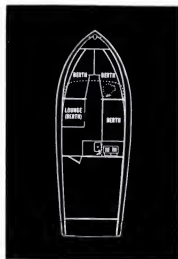
\$53 to \$255

Enjoy new fun and adventure, save up to 50% with a 1956 Chris-Craft Boat Kit! Choose from such top performers as the *8-ft. pram (kit \$53); the sporty 12-ft. Vagabond (kit \$133); the trim 14-ft. Dolphin (kit \$158); the rakish 14-ft. Caribbean (shown at left; kit \$192); or the rugged 15-ft. Marlin (kit \$255).

SPORTS
RUNABOUTS

\$167 to \$349

Finest designs and materials go into our new Boat Kits; they're *easy* and *fun* to put together! See the sleek, five-passenger 14-ft. Bonito with smart center deck (kit \$167); the sensational 14-ft. Barracuda (kit \$229); or the superb 16-ft. Custom Runabout (shown at right) with its roomy cockpit (kit \$349).



CRUISERS

Outboard or Inboard

\$352 to \$910⁵⁰

BUY NOW! SEE YOUR CHRIS-CRAFT BOAT KIT DEALER OR MAIL COUPON, TODAY!

CHRIS-CRAFT CORPORATION, BOAT KIT DIVISION, ALGONAC, MICHIGAN

Gentlemen: Please send me more information about 1956 Chris-Craft Boat Kits.

NAME

ADDRESS

CITY ZONE STATE

For weekend or vacation cruising, there are low-cost cruisers: the 16-ft. Outboard Two-Sleeper Express (kit \$352), and both inboard and outboard models in the beautiful 22-ft. Four-Sleeper Express Cruiser shown above (hull and cabin kit only \$910.50; cabin interior kit \$83; fly-bridge windshield kit \$62.50).

Prices f.o.b. factory, subject to change without notice.



"TWINSULATE" your attic...it's easy

Make your whole home up to 15° cooler this summer! Cut your fuel bills up to 25% next winter!



You've dreamed about insulating your attic... talked about doing it... known so well how much warmer it would make your home in winter... how much cheaper to heat... how much cooler and more "sleepable" in summer.

But perhaps you didn't know that you now can TWINSULATE your whole attic in just a few hours this very week end... with Gold Bond TWINSULATION®.

TWIN ACTION... Gold Bond TWINSULATION gives you heat-blocking, fireproof rock wool *plus* a heat-reflecting covering of silvery aluminum *all* around it. You get a unique *twin insulating action* that cuts your fuel bills up to 25% and makes your house ever so much more livable all year!

See your Gold Bond dealer now. He'll show you samples, give you all the simple directions you need and supply a handy stapler for easy application.

NATIONAL GYPSUM COMPANY—Buffalo 2, N. Y.

Send for booklet that tells all about Gold Bond TWINSULATION... what it does for your home, how it cuts fuel bills.



NATIONAL GYPSUM COMPANY
Dept. PS26, Buffalo 2, N. Y.

I enclose 10¢ for "Home Insulation" booklet.

Name _____

Address _____

City _____ Zone _____ County _____ State _____

Mr. Power Steering's Ship Comes In

[Continued from page 164]

big advantage. Now, the inventor figured, he'd sit tight and wait out the boom.

By the late forties sales had slackened and customers had begun to pick and choose. The big companies had to look for new selling points. The log jam broke in 1951 when, with great fanfare, one of them announced a model with an absolutely new feature—power steering. It was hot—it was revolutionary...

Ironically, the first production of power-steered cars didn't net Davis a nickel. They used Davis principles, but only those in the expired patents.

The inventor didn't worry. Within hours of the announcement, Bendix was besieged with customers for its Davis-

A badly needed invention in America today is some kind of dough that really sticks to your fingers.

—THE SIDEWALK SUPERINTENDENT

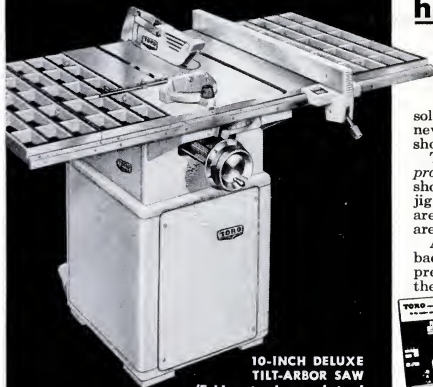
licensed units. Adaptation and tooling problems that had dragged on for years were conquered in weeks as the big companies rushed to meet the competition.

Davis draws royalties today primarily from his axial-movement patent, which will expire in three years. But he isn't waiting. Over the years he has taken out over 30 U.S. and foreign patents in this field. And he has further improvements on the fire. With these he hopes to maintain the dominant position of Davis-licensed power-steering units for years to come.

About once a week, a struggling inventor drops in at Davis' modest Waltham office, eager to show him bundles of blueprints. Davis courteously looks them over. But he warns his visitors that a good idea is only the first step toward a commercially successful invention. The real headaches come with investigations, designs, tests, patents. Timeliness is vital; so is luck. And, he adds with only a touch of grimness, don't overlook the other requisite for becoming a successful inventor: a long life.

END

TORO



**10-INCH DELUXE
TILT-ARBOR SAW**
(Table extensions and stand
optional. 8-inch models available.)

Now! Professional quality in home power tools!

What a pleasure to work with — the new Toro power tools! Mirror-polished working surfaces make handling easy. Every operation is done accurately. And every finished piece fits tightly, solidly, to give you the kind of results you never thought possible with home workshop power tools.

The reason is simple. Toro has built professional quality into its home workshop table saws, drill press, jointer-planers, jig saw, band saw and belt sander. Castings are heavier. Finishing is finer. Tolerances are closer.

And no wonder! Toro power tools are backed by 40 years' experience in building precision power equipment — including the world's most complete line of power mowers.



See the new Toro power tools at your dealer's soon, and write Toro, Dept. PS-26, Minneapolis 6, Minn., for your copy of the deluxe full-color catalog.

TORO MANUFACTURING CORP.
MINNEAPOLIS 6, MINNESOTA

BE PRECISE

Say **STANLEY**

It's A Good Rule



Easy to use 8' tape rule—Model 1208W
\$1.19 at your hardware store.

Other Stanley Rules from 75¢ up, 6 ft. to 12 ft., and each in the reuseable plastic box with the magnifying lens. You'll use the rule — you'll use the box.

Write Stanley Tools, 2502 Elm St., New Britain, Conn., for free booklet on measuring tools and how to use them.

STANLEY

Shark Brand Swedish Chisels



Make Your job easier.

You'll do neater, more accurate woodworking with SHARK BRAND SWEDISH CHARCOAL STEEL paring chisels . . . hold their sharpness 3 times longer than ordinary chisels.

Write for new folder Dept. PS

Sandvik SAW & TOOL

DIVISION OF SANDVIK STEEL, INC.

1702 NEVINS RD., FAIR LAWN, N.J.



LUBRIPLATE

THE MODERN LUBRICANT



LUBRIPLATE H.D.S. Motor Oil—A heavy duty superior oil with high film strength. Fully detergent, keeps your engine clean, gives your car more power, faster starts, better fuel economy. The oil that requires no additives.

LUBRIPLATE CAR LUBRICATION

LUBRIPLATE Car Lubrication is different . . . it's better. **LUBRIPLATE** Lubricants make your car run better, last longer. Protect your car investment, cut your repair bills and parts replacements to an absolute minimum. If you want the very best for your car insist on **LUBRIPLATE** Lubrication.

LOOK FOR THIS SIGN!

It's Your Guarantee of the Finest in Car Lubrication. Consult your car dealer.



LUBRIPLATE IN TUBES

Packed in handy tubes for convenient lubrication of car door hinges, locks, hoods, fishing reels, guns, outboard motors, and everything in and around the house. Available at sporting goods and hardware stores, marine dealers and all automotive outlets.

Best for Outboards



Best for Guns and Reels



Best for Lawnmowers



LUBRIPLATE DIVISION, Fiske Brothers Refining Company, Newark 5, N. J., Toledo 5, Ohio

Fuel Injection Is Coming This Year

[Continued from page 143]

it is torque that supplies the push at the rear wheels.

Cheaper fuel, more miles. With fuel injection, a car owner can, if he likes, trade the added horsepower that he gets for cheaper fuel. A fuel injection engine will perform nicely, without pinging, on lower-octane gas. Or he can trade the horsepower for even more miles per gallon by leaning-out his mixture.

With fuel injection, hood lines can come down because the carburetor is thrown out. The fuel-distributing system, and even the air cleaner, can be located anywhere in the engine compartment.

If fuel injection is so wonderful, why has it been so long in coming? The answer is that it has always been too expensive for Detroit to consider. The injection system alone on the Mercedes-Benz, best known of the fuel-injection cars, costs \$500.

A carburetor is simple—at least in theory. A fuel-injection system, with fuel pumps, fuel filter, injection nozzles and other components, is not. For years Detroit looked at fuel injection and said uh-uh.

In the absence of a demand, little was spent to explore fuel injection's possibilities. Some racing and aircraft engines used it because cost was a minor factor. Diesels used it because injection was the heart of the system.

But so long as a carburetor cost three dollars, nobody was interested.

Power and pots. Then came the flood of high-horsepower V-8s. Their fuel and air appetites were finicky. The old two-barrel carburetor that the automobile companies bought for three bucks gave way to one with four barrels that cost \$12 to \$15. When, as sometimes happened, two of the things were mounted on an engine, the cost soared to as much as \$30. Fuel injection then began to look better.

Detroit now has been working actively on fuel injection for at least 2½ years. Bosch was successful at getting the pros-

[Continued on page 274]

FRENCH PLIERS

Rockwell Tested

Made to U.S. Govt. specifications. Meets Rockwell hardness test. Mirror-polished heads, blued handles, hand-honed cutting edges. Unconditionally guaranteed.

LINESMEN'S PLIERS

7 inches...\$1.19
8 inches...1.29

LONG NOSE with CUTTER PLIERS

5 1/2 inches...\$.89
6 1/2 inches... .99
8 inches... 1.19

DIAGONAL SIDE CUTTER PLIERS

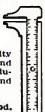
5 inches...\$1.09
6 inches... 1.19

(Add 10c to each plier for postage and handling.)

SOLID BRASS

POCKET SLIDE CALIPERS

One of the handiest and most accurate instruments made. Of highly polished brass, lacquered for durability. 3-inch capacity for precision inside and outside reading. Graduated in thirty-seconds and sixty-fourths of an inch. Individually packed... \$2 ppd.



CHROME VANADIUM

29 Pc. DRILL SET



Specialty made for speed drilling. In sturdy plastic tool roll. Finest steel.

and precision drills, hardened sharp, longest lasting cutting edge obtainable; will easily and cleanly bite through hardwoods, plastics, aluminum, iron and copper. Individually guaranteed for thousands of drillings. Full 1/2 inch length. Size: 64ths from 1/16 to 1/2". NOW \$6.49 ppd. Also available with Turned Down Shanks to fit all 1/2" drills. In individual pocket roll... \$8.95 ppd.

60 Pc. Set Wire Gauge

CHROME VANADIUM DRILLS



Top quality high test Chrome Vanadium Drills designed for speed drilling through toughest steels, woods, plastic, iron and aluminum. Precision ground, long-lasting cutting edges. Guaranteed to give years of satisfaction. A full 60 pc. set nos. 1 through 60.

A \$14.95 value \$5.35 NOW ONLY plus 25c pp. & hdg. Same set above available with Rust Index container— \$6.35 Only plus 25c pp. & hdg.

Send check or money order. If C.O.D. fee extra.

Money Back Guarantee.

SCOTT-MITCHELL HOUSE, Inc.

Dept. M-145

611 Broadway

N.Y. 12, N.Y.

POWER PULLEYS AND V-BELTS

THIS BOOK TELLS YOU HOW TO MAKE THINGS with PULLEYS and V-BELTS

- HOME APPLIANCES
- POWER TOOLS
- MOTORIZED TOYS

A "must" for every home mechanic—this book is full of facts and figures on how to use pulleys for power.

"MAKE IT YOURSELF" CONTEST

A \$50 prize every month—duplicate prize for your dealer. A grand \$100 prize every six (6) months. Get the details from your dealer or write direct.

You can make many useful things with pulleys and v-belts, a few gadgets and a spare motor or engine. Order your book today and start a useful project.

Win yourself a \$50 Savings Bond and make a useful tool or toy.

SEE YOUR DEALER OR SEND THIS COUPON TODAY

CONGRESS DRIVES DIVISION TANN CORPORATION

3750 E. Outer Drive, Detroit 34, Mich.

Gentlemen:

Enclosed is 25c—please send me the book "POWER Through PULLEYS and V-BELTS"—also contest entry form.

Name

Address

City

ACT NOW! SAVE \$10

on this

Cummins

MAXAW and SAW TABLE COMBINATION



- New Cam Lock Rip Fence
- Precision Miter Gauge
- Built-in Off-On Switch

BOTH FOR

\$79.90

Regular Price \$89.90

Slightly higher in Canada

MAKES ALL CUTS IN 2" DRESSED LUMBER

BIG BONUS BUY FOR THE DO-IT GUY

A saw table one minute, a portable saw the next! Both for what you'd expect to pay for the saw alone. Now! Get real professional results on all building and home improvement jobs. \$49.95 MAXAW plus \$39.95 saw table at special \$10.00 savings. Act now! Offer expires June 30, 1956.

MAXAW 777 SAW TABLE

Rugged, all-steel; oversize top, 24" x 20". 34" height. New Cam Lock rip fence and 7" calibrated miter gauge operate from either side of saw blade.

MAXAW 717 POWER SAW

Famous magic pivot gives MAXAW deeper cuts—1 1/4" at 45°, 2 1/4" at 90°—with 6 1/2" blade. Hardened steel gears: snap-back telescope guard. Lighter, easier to handle.



Saw shoe slips flush into table in seconds.



Same cutting capacity as 8-in. Table Saw.



True-Course Guide* automatically guides saw, prevents wood bind. *Patent Applied For



Rip Fence Guide FREE. Regular \$2 value.

In Canada: 334 Lander Ave., Toronto 10, Ontario

COPYRIGHT 1956 J.O.M.C.

Get FREE Power Tools Book

John Oster

MANUFACTURING CO. Dept. C-1, 5055 N. Lyndell Milwaukee 17, Wis.

Please send full-color booklet showing 64 ways to use power tools.

Name _____ Address _____ City _____ State _____

Kitty Kimsul says:

*"Here's the easiest
insulation of all to cut,
measure and install!"*



• KIMSUL Insulation is designed to cut winter fuel bills up to 33%—to keep your house up to 20° cooler in summer.

- And KIMSUL is clean—free of irritating dust and slivers.
- So light and compact even a woman can carry a 200 ft. roll—or take home enough in the car to insulate an entire attic.

*At your Kimsul
lumber dealer's—this
denim cobbler's apron.
Regular \$2.50 value—
only 89¢*

Perfect for hobby work, gardening, barbecuing. Has three large pockets, adjustable waist and neck bands. Only at your KIMSUL lumber dealer's and only for a limited time.



KIMSUL
A PRODUCT OF
Kimberly-Clark
INSULATION



Kimberly-Clark Corporation • Neenah, Wisconsin

Fuel Injection Is Coming This Year *[Continued from page 272]*

pective price down, and began delivering hand-built units to certain car manufacturers for research in mid-1954. Every independent carburetor manufacturer selling to the auto factories has some sort of a fuel-injection system on test.

There are wide variations in fuel-injection design. Racing engines often use a constant-flow or "drool" system. An intermittent system, wherein the fuel is vaped directly into the cylinders, through holes in the cylinder walls, is highly successful. It works—but the cost is prohibitive. The injection pump must be big to supply the necessary pressure, and the nozzles must be rugged enough to withstand the high temperatures and pressures in the cylinders.

Cool nozzles. Bosch devised a system with what is known as "port injection." The fuel is vaped into the cylinders from nozzles placed just behind the regular intake valves. It goes in with the air, which is delivered by the intake manifold. The nozzles are cooled by the vaporizing gas and the air. They are not subjected to the heat and pressures in the cylinders.

Fuel-line supply pressures are lower. So the pumps can be smaller and cheaper.

The big problem was fuel-flow control. A diesel engine doesn't care a great deal how much air is rammed into its cylinders. When the fuel comes in and the piston goes up, it fires. But if the proper fuel-air ratio is not maintained in a gasoline engine, says Sidney E. Miller, American Bosch's engineering vice-president, "you're dead."

Bosch wanted a simple, inexpensive control. It was obtained by keying fuel flow to intake-manifold pressure. The accelerator pedal, acting exactly the opposite to that on a diesel, valves only air into the engine. The position of the valves—the same butterflies that you have in your present carburetor—determines the amount of vacuum in the manifold.

Vacuum control. A little pipe taps the manifold. The amount of vacuum

[Continued on page 310]



Professional, big-tool precision
at small-tool cost!

...in the new Yates-American Saw-Jointer-Sander Combination

Standing behind your choice of Yates-American is the experienced craftsmanship of a company that, for more than 73 years, has specialized in designing and building precision machinery for professional woodworkers.

You get instant change-over

and many other features that give you more for your money

See your Yates-American dealer



Yates-American

BELOIT,
WISCONSIN

Chicago, Ill. • High Point, N. C. • Memphis, Tenn. • Portland, Ore.

Manufacturer of woodworking machinery since 1883

A tool with a
touch of tomorrow

\$274.50

complete with 1/2-hp.
totally enclosed, dust-proof
motor that runs everything
(Less saw guard and
table extension)

Send coupon
for free bulletin—
and name and ad-
dress of your dealer

YATES-AMERICAN

Dept. B, 783 North Fourth St., Beloit, Wisconsin

PT-3

- ☐ Send free bulletin on Yates-American
Saw-Jointer-Sander Combination.
☐ Send name and address of my Yates-American dealer.

Name.....

Address.....

City.....Zone.....State.....

LUFKIN
MICROMETERS

With NEW
CAM LOCK

LOCK EASIER
FASTER

MORE SECURELY

Now, you can lock
faster, more securely
with just a flick of the
thumb. This new com-
action lock positively
secures the thimble from
movement until the
reading is made or
transferred. An exclusive
new feature, available
only on Lufkin Big Bor-
rel Micrometers.



BUY **LUFKIN** TAPES • RULES • PRECISION TOOLS
AT YOUR HARDWARE OR TOOL STORE

BETTER MEASURE WITH **LUFKIN**

THE LUFKIN RULE CO., SAGINAW, MICHIGAN

396

Famous Antique Shop

uses and recommends

Klean-Strip Paint Remover

KLEAN-STRIP, the non-inflammable paint
remover, is used exclusively by Leonard's
Antiques, Seekonk, Mass., to restore the
beauty of wood heavily coated with paint and
varnish. L. C. Leonard reports "KLEAN-
STRIP has far exceeded expectations . . .
and exceeded results obtained with other re-
movers used. We are sure it's the best."

KLEAN-STRIP works best for any refinish-
ing job. It's fast-acting, easy to use, needs no
neutralizing or afterwash. Buy it when and
where you buy paint.



THE KLEAN-STRIP CO., INC.

2340 S. Lauderdale, Memphis 6, Tenn.

NON-INFLAMMABLE
KLEAN-STRIP
"PEELS OFF PAINT"



NEW . . .

**THE SMOOTHEST 24"
BALL BEARING JIG
SAW EVER DESIGNED!**

**NOW YOU CAN WORK Magic with
WOOD, METAL OR PLASTICS**

New appearance . . . NEW engineering . . . NEW accuracy and efficiency. Every part of this saw is newly designed to minimize vibration and promote smooth, clean, accurate cuts. Has tremendous capacity . . . handles wood, metal, plastics, compositions, bone, ivory . . . cuts up to 2 1/4" thicknesses . . . has 24" throat capacity . . . blade turns 90° for cutting long stock, and arm is removable for sabre cutting panels of any size . . . massive 14" x 14" precision ground table is supported on big, widely spaced trunnions to give the rugged foundation needed for heavy work . . . table tilts 45° right, 15° left, and swivels 90° . . . operates at four speeds suited to different materials.

And it's the smoothest running jig saw ever . . . has scientifically balanced mechanism, drive shaft that turns on two ball bearings, spinning blade support, complete splash lubrication, and exclusive spring steel hold-down that keeps work firmly in position. See it at your ATLAS franchised dealer's . . . you'll agree that no other jig saw compares with the new ATLAS No. 4002.

**you can DO so much MORE
so much BETTER with**

WRITE FOR FREE LITERATURE



Atlas Press Company

ATLAS WOOD WORKING POWER TOOLS
ATLAS METAL WORKING MACHINE TOOLS
CLAUSING HEAVY DUTY MACHINE TOOLS

225 N. PITCHER ST., KALAMAZOO, MICH.

U-MAK-IT BOAT KITS

**TWICE THE FUN—
HALF THE COST!**

**MOST COMPLETE LINE OF
BOAT KITS 8 TO 23'—
PRAMS, ROWBOATS, OUT-
BOARDS, CABIN CRUISERS**

**Finest hobby with unequalled
rewards for you, your family
and friends.**

**Start building! Stop wishing!
Be shipshape for the
first break of the season.**

**Ask for your copy
of our completely
ILLUSTRATED CATALOG
showing all models, accessories,
all you need to build your own.
Send 25¢ (coin) for postage and handling**



U-MAK-IT products

703 R WHITTIER ST., BRONX, 59

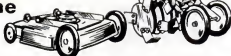


NEW YORK

BOLENS 2 in 1 POWER-PAK COMBINATION Tiller & Mower



**Why buy two
when one
will do?**



This compact unit with big 2 1/2 h.p. Clinton 4-cycle engine attaches in seconds without tools to a powerful 12 to 18 inch Rotary Tiller or to an 18 inch side-trimmer Rotary Mower with an efficient side discharge—everything you need for a beautiful garden and lawn.

See POWER-PAK at your Bolens dealer today!

MAIL COUPON for DETAILS

**BOLENS PRODUCTS DIVISION
Food Machinery & Chemical Corp.
267-E Park Street, South
Port Washington, Wisconsin**

Please send me full information re Bolens Power-Pak combination unit.

NAME

ADDRESS

CITY STATE

House a hobby handsomely in space-saving built-ins!

This useful and decorative group of Western Pine* shelves and cabinets houses Hi-Fi equipment, records and books. Build one around *your* hobby, whether it's music, motion pictures, collection of pewter or ivories—even an aquarium of tropical fish!

Clean-cutting, smooth surfaced and economical Western Pine woods are a joy to use in any workshop project. They are carefully selected and well seasoned, take all finishes without grain raising. See them at your local lumber dealer.

FREE—"INSTALLING AND COLORING YOUR WALLS OF WESTERN PINES." Also, "FRIENDLY HOME IDEAS IN WESTERN PINE," new booklet of building and remodeling ideas—88 pictures! Write to WESTERN PINE ASSOCIATION, Dept. 501-L, Yeon Building, Portland 4, Oregon.



the Western Pines

- *IDAHO WHITE PINE
- *PONDEROSA PINE
- *SUGAR PINE



TODAY'S WESTERN PINE TREE FARMING GUARANTEES LUMBER TOMORROW

...TURN CONCRETE INTO GOLD!

MAKE UP TO \$75 A DAY IN YOUR OWN BUSINESS

If you want to have your own business — to start a business on your own — here's your big opportunity! New high speed, low cost General block machine produces up to 1,000 concrete blocks a day. Sell all you make to builders, supply houses, and others for homes, factories, buildings, garages. Cash in on the building boom! You can make profits of 100% to 150% — up to \$75. a day! General block machine equipped with 1/2 h.p. electric motor — or can be supplied with gasoline engine — works anywhere, in little space, indoors or out. Operates from ordinary house light socket. Simple, foolproof 3 step operation — so easy a child can do it. Makes superior 3 core blocks any size from 4" to 12". Also makes chimney, arch, corner and other types. Blocks meet any building code anywhere in the country. Materials — sand, water, cement, available anywhere. Simple illustrated operating instructions and mixing formulae for concrete and cinder blocks supplied with each machine. Write for FREE folder with full information.

MOTOR DRIVEN

R.L.T. of New York City reports: "MY GENERAL BLOCK MACHINE PAID FOR ITSELF IN FIRST 2 WEEKS!" Hundreds now in use the world over! Write for FREE details today!

EXTRA

book gives floor plans for 6 sensational concrete block bungalows. Tells how to lay blocks, lay out building lines, mix concrete, build steps, porch and concrete floors all at great savings. Written by experts. Can save many times the cost of the machine! Get it now! No strings attached. Send \$1.

BOOK SENT FREE IF YOU BUY MACHINE.
\$1 REFUNDED IF YOU BUY LATER.



GENERAL ENGINES CO.

DEPT. 5-26

ROUTE 130, THORFARE, N. J.

ANSWERS TO 100 BUILDING QUESTIONS

Send for the Homasote Handbook (64 pages)!

It took 20 years to write this "know-how, show-how" book!

Here, in simple, clear-cut language, the owner who proposes to do it himself — and the owner who proposes to use a professional builder — will find the answers to the values he might seek in interior walls, ceilings, sub-flooring, exterior sheathing, exterior finish, roof-decking, etc. He will be shown the do's and don'ts in each operation. For any part of a house — or the whole house — he will know that he has sound investment values and comfortable living. Elaborately indexed to enable you to find the answers to your questions. Mail the coupon today.



MAKE IT AT HOME — WITH HOMASOTE

HOMASOTE COMPANY

Department B-5, Trenton 3, N. J.

Please send me the Homasote Handbook.

I enclose 10¢ to cover handling costs.

NAME _____

ADDRESS _____

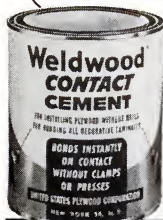
CITY _____ ZONE _____ STATE _____

FEBRUARY 1956 277

Now! Do jobs you never tried before!

NEW! WELDWOOD® CONTACT CEMENT

MAKES "IMPOSSIBLE" JOBS EASY!



Another Weldwood Wizard

BONDS INSTANTLY ON CONTACT WITHOUT CLAMPS, PRESSES, NAILS!

1001 USES FOR HOME, HOBBY, GARAGE!

THINGS YOU CAN DO!

APPLY MICARTA or other plastic surfacing materials, without clamps or presses!

PUT UP PLYWOOD paneling without nails!

STAIR TREADS—put down stair treads made of any material.

WEATHER STRIPPING—apply it to doors or windows of home or car.

PROTECT WITH FELT—apply felt bases to lamps, vases, etc.; make felt-backed protective covers for dining tables etc.

LEATHER—apply leather to any surface: desk tops, tables.

HOBBY WORK—model building; leather crafts; metal working; wood working.

ALUMINUM—make place or counter mats; cover anything with aluminum.

CLOTH & PAPER—apply cloth of any kind (canvas, upholstery material etc.) to wood, composition board or metal. Fasten paper to paper or anything else.

THINGS YOU CAN MEND!

Restore loose wood veneers, even in places where clamps can't hold—because no clamps are needed.

Repair rainwear, beach bags, rubberized cases, furniture covers, etc.

Repair or replace weather stripping of home or car.

Repair or replace articles made of Novoply, Masonite, Weldwood Hardboard, Tekwood.

Retine or recover luggage; mend belts, bags, book bindings, etc.

Repair anything made of paper, cardboard, fabric and Fiberglas®

Repair convertible auto tops, torn seat covers or upholstery.

In tubes, bottles, cans. 25¢, 35¢, 60¢ and larger sizes at hardware, paint and lumber dealers and variety stores. Mail coupon for leaflet.

United States Plywood Corporation

Box 525, New York 46

PS2-G

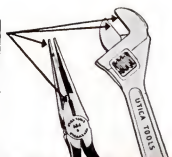
Please send me information on Weldwood Contact Cement.

Name

Address

City Zone State

Extra-hardened at points of extreme wear. Last longer.



Are Your Pliers Worn Out?

Take a good look at your pliers and adjustable wrenches. Are they worn, nicked and burred?

If so, there's small satisfaction in using them. Jobs are harder and slower. Hobbies are less fun.

But fine, drop forged UTICA® pliers and adjustable wrenches are a pleasure to use—because they make the job easier, quicker, better.

Your dealer has them or can get them for you.



The Modern PLASTIC for lasting Home Repairs

PERMANENTLY mends cracks or holes in wood, tile, stone or plaster. Sticks and stays put—Does not chip, shrink or fall out. Easy to use. Economical. Mold it, chisel it, polish or paint it. The big 4-lb. can is obtainable from your lumber, paint or hardware dealer at \$1.25; or will be shipped direct postpaid (in U. S.) for \$1.50. Complete satisfaction guaranteed or your money refunded. Order now.

DONALD DURHAM CO.
Box 804-U Des Moines, Iowa

DRILL • SAW • REAM • CUT

ALL WITH ONE BIT!

BEAVER HI-SPEED SAW DRILL BIT



ONLY
\$2.45 each
3 for \$7.00
POSTPAID

Beaver's new improved high speed side cutting drill bit can be used on any electric drill, drill press, lathe or milling machine. Made from the finest American high speed steel. 3 1/2" long; 2" side cutting section, 1/4" diameter. Designed to cut steel, wood, plastic, aluminum, etc. A versatile time-saving tool for EVERYONE. Money back guaranteed Three types available: All-Purpose, Wood and Heavy Metal—specify type desired. Buy them from your dealer today! Or send cash, check or money order NOW..

SET OF 3 MAKES AN IDEAL GIFT.
Dealer inquiries invited.

BEAVER DRILL & TOOL COMPANY

3008A McGee Trafficway

Kansas City 8, Missouri

Why Edgeworth Smokes Coolest (8 to 10 DEGREES COOLER)



A. BITS AND FLAKES
burn hot and fast, bite the tongue.

B. FINE CUT SHREDS
all right for cigarettes—
not so good for pipes.

C. ONLY EDGEWORTH
gives you slow burning,
cool smoking "chunks."



ONLY EDGEWORTH IS "READY-RUBBED"

No other tobacco manufacturer can duplicate the Edgeworth cut—because it's actually "ready-rubbed" by an exclusive process. See in the picture what a difference this makes. Edgeworth is made of cool smoking white burley, and packed fresh in this heat-sealed wrap-around pouch. This is why Edgeworth smokes 8 to 10 degrees cooler by actual test.



AMERICA'S FINEST PIPE TOBACCO—LARUS & BROTHER COMPANY, INC., RICHMOND, VIRGINIA

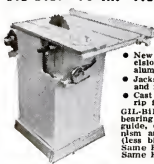
BUILD YOUR OWN POWER TOOLS—WITH GIL-BILT PARTS KITS

Exclusive GIL-BILT Build-It-Yourself Features

- No machining—built easily with hand tools only
- No blueprint, reading step-by-step pictorial plans, full scale patterns, actual photographs.
- Sturdy wood, aluminum and steel construction
- Capacity and performance of commercial saws selling from \$60 to \$250.
- Proved performance. Nationally advertised and sold for 8 years. Satisfied customers around the world.

PLANS \$1.00 EACH POSTPAID

GIL-BILT 10-in. TILT/ARBOR SAW



- 27x28 in. table, 13 1/2 in. capacity in front of blade
- 10 in. blade cuts 3/4 in. deep, tilts full 45 degrees
- Floor model 3/4" high, table always stays level
- New Depature ball bearing arbor, 3/4" precision shaft turned down for 5/8" bore blades, alum. housing, shipped ready to run.
- Jackscrew and 4 1/2 in. dia. handwheel lowers and raises blade.
- Cast aluminum miter gauge and self-aligning rip fence guide

GIL-BILT Metal Parts Kit includes Plans, ball bearing arbor, miter gauge and bar, rip fence guide, dado insert, lock knobs, jackscrew mechanism and handwheel, and all other metal parts (less blade).....\$22.95
Same kit with 10" Combination Blade \$23.95
Same kit with 8" Combination Blade \$24.95

GIL-BILT 12-INCH BAND SAW

- Cuts to center of 24 inch electric
- Handles stock up to 6 inches thick
- 18x18 inch table tilts 45 degrees
- Lower wheel and drive pulley runs on sealed New Depature Ball Bearings: Upper wheel runs on 2" bore Oilite Bronze bearings.
- Upper wheel tension and tilt mechanism of cast aluminum, completely assembled
- Upper and lower blade guides. Each has ball thrust bearing, self-lub bronze jaws
- Rigid cast aluminum wheels fully machined ready-to-install. Heavy rubber tires
- Uses standard 75 inch blades up to 3/8 in. wide
- Fully enclosed mechanism for utmost safety

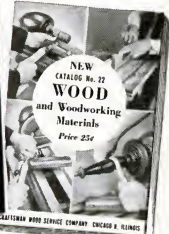


GIL-BILT Metal Parts Kit includes Plans, rubber tires, aluminum wheels, 1/2 in. blade, ball bearing spindle, tilt mechanism, blade guides, table tilt segments, and all other metal parts.....\$23.95
Return Kit in 10 days for refund if not satisfied. For shipments up to 400 miles, add 5%; over 400 add 10% (exclusive of actual postage will be refunded). Order Kit now, or order Plans at \$1.00 each and kit later less cost of Plans. Write for FREE Catalog.

GILLIOM POWER TOOLS

Dept. 70-B Lambert Field
St. Louis 21, Missouri

Get This NEW Catalog of WOOD AND WOODWORKING MATERIALS



World's Largest Selection of Finest Domestic and Imported Woods... Mouldings, Hardware, Tools. — ALL AT LOW MONEY SAVING PRICES!
Your complete wood buying guide and project book. Craftsman is your best, most complete source of finest kiln-dried domestic and rare imported woods, beautiful wood inlays, colorful bandings, matched plywoods, embossed mouldings, carved ornaments, newest woodworking tools, "hard to find" cabinet hardware and fittings... more than 1,500 items! Packed with newest scroll saw patterns, project ideas & money making plans. Enclose 25c (refunded with first order) to help pay mailing, handling cost. Write now! Craftsman Wood Service Co., Dept. B-2, 2729 S. Mary Street - Chicago 8, Ill.

128 PAGES Many in full color
packed with rare, fancy & imported woods... veneers, plywoods, patterns, tools, ornaments, hardware... everything for the woodworker.
MAIL COUPON NOW!

CRFTSMAN SERVICE CO., Dept. B-2,
2729 S. Mary St., Chicago 8, Ill.
Enclosed find 25c. Rush me new Woodworkers' Catalog Handbook.

NAME.....
ADDRESS.....
CITY.....ZONE.....STATE.....



Need more closet space? This one's easy to build. Made from Upson $\frac{3}{16}$ ". Just nail Upson in place and paint. Upson's easy to work, edge sand smooth.

save 50% and more wherever your projects call for wall board

Upson wall board is perfect for all kinds of do-it-yourself projects. The list is endless: make cabinets, chests, closets, use Upson to finish your basement walls and ceilings, garage, add-a-room. Or make cut-out toys, a model train table. In fact, use Upson like plywood. Only with Upson you save money. Save up to 50% on each square foot you buy. And Upson is easy to work, light, strong. Saws like wood, paints beautifully.

Upson comes in a large variety of thicknesses and sizes. From $1/10"$, $1/4"$, $3/16"$ to waterproofed, super-strong $3/8"$ for outside use. Pebbled, smooth and striated surfaces. Sizes from $4' \times 6'$ to huge $8' \times 20'$; plus $12'$ sq. Ceiling Tiles. There are many imitations, so ask for Upson wall board by name!



Upson wall board saws easily, edges sand clean, smooth

See your lumber dealer

UPSON

WALL AND
CEILING PRODUCTS
SIDING, SHEATHING



99% new spruce wood fibers laminated for great strength

THE UPSON COMPANY, LOCKPORT, NEW YORK

DO IT YOURSELF DEGREASER! engine shampoo



QT. SIZE CONCENTRATE
MAKES 2 GALLONS



Takes cling out of oil and grease... emulsifies it... so that all dirt may be hosed off as easily as you rinse hands under water faucet. Launder engines faster, more completely, and safer than steam cleaning (warm the engine). Self scouring action brings out factory new appearance... provides accurate visual inspection... Gunked engines run cooler. Genuine Gunk is sold in BULK sizes at better automotive wholesalers everywhere. Retail sizes sold at WESTERN AUTO STORES and ASSOCIATE STORES. TRY IT TODAY!

The CURRAN CORPORATION, Lawrence, Mass.

DO IT YOURSELF!

SAVE ON SERVICE CALLS—

Test your own TV and Radio Tubes with the Home Service Tester. Also tests appliances for shorts and broken wires or elements, light bulbs, fuses, motors, flash bulbs and any other electrical equipment. Same tube tester now being used by over 25,000 TV and Radio Servicemen. Quick—shock-proof—no technical knowledge required. Save Money Now—by ordering SATISFACTION GUARANTEED or your money back. (complete with easy instructions.)

\$4.95

postpaid



Lindaily Products

2626 W. 103rd Pl.,
Chicago 43, Ill.

Dept.
PS-2

Paint STRIPES with New "PAINT PEN"!

Straight, Curved or Parallel Lines

Use like a fountain pen with any color paint to stripe furniture, bikes, autos, model planes, toys, linoleum, wall board. Beautiful clean, crisp results every time. Can't clog or smear. Also use with glue, tempera, textile paint or ceramic under glaze. Paints on wood, glass, plastic, metals, fabrics and paper. Tool complete with tip for $1/16"$ stripe only \$1.25 postpaid. Other complete tools with following tips, $1/64"$, $1/32"$, $3/64"$, $5/64"$, $3/32"$, $1/4"$ —\$1.75 each. Extra tip \$ide each. Entire kit with tool and 7 tips—\$5. A $1/4"$ tip only \$1.20 each. C.O.D.'s postage collect.

New! "DOUBLE-STRIP" 5 Way

Combination Model only \$3.25

Double Stripes—one wide and one narrow or two wide or two narrow at the same time.

FREE Send postcard for complete information—or ORDER TODAY.



DEALER'S: Master Paint Stripping Tool in display cabinet of 1 doz. FAST, PROFITABLE SALES. Write for new discounts.

HOME CRAFTSMEN! New Paint Stripping Tool gives "professionals" results every time, simple, easy to use. Send \$1.25 now.

MANUFACTURERS! Write today for information about industrial models and production stripping tools.

WENDELL MFG. CO., Dept. 214
4234 Lincoln Ave., Chicago 18, Ill.

ALL
ITEMS
Conditionally
ANTEEDI

free

GET THE WORLD'S LEADING
TV & RADIO PARTS AND
EQUIPMENT CATALOG

ALLIED'S 1956 ELECTRONIC SUPPLY GUIDE

**324
VALUE-
PACKED
PAGES**



Save on
Everything
in
Electronics

**WORLD'S
LARGEST
STOCKS**

**Everything for Experimenters,
Builders, Amateurs, Servicemen,
Engineers and Hi-Fi Experts**

Send for ALLIED's big 324-page Catalog, offering the world's largest selection of latest top-quality electronic equipment at lowest, money-saving prices. Features High Fidelity systems and components; recorders and phono equipment; TV tubes, antennas and accessories; Amateur station equipment; P.A. systems; test instruments; latest build-your-own kits; industrial electronic supplies—plus thousands of parts, tubes, transistors, tools and books. Get everything, get more for your money—send today for your FREE 1956 ALLIED Catalog!



ALLIED RADIO

ALLIED RADIO CORP., Dept. 7-88-6
100 N. Western Ave., Chicago 80, Ill.

☐ Rush FREE 1956 ALLIED 324-Page Catalog

Name _____

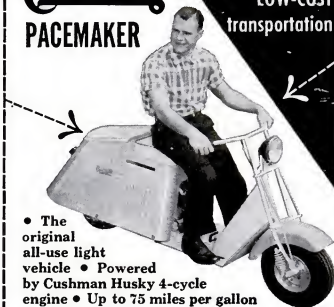
Address _____

City _____ Zone _____ State _____

Send for
FREE
CATALOG

Cushman
PACEMAKER

ACE of ACES in
LOW-COST
transportation



- The original all-use light vehicle • Powered by Cushman Husky 4-cycle engine • Up to 75 miles per gallon ... 3/4¢ per mile total operating cost.

Ask your dealer for a **FREE** demonstration or write for illustrated literature. Dealer inquiries invited.

928 No. 21st
Lincoln, Nebraska

**CUSHMAN MOTOR
WORKS, Incorporated**

ONE-MAN SAWMILL LOW \$50.00 DOWN AS...
FREE BOOK

Take BELSAW Portable Sawmill right to the trees—turn out valuable lumber for home and farm—sell to local yards—make up to \$50 a day custom sawing for neighbors. BELSAW lasts a lifetime. No crew needed. Power with tractor or auto engine. Beginners get excellent results. Send today for **FREE BOOK**.

BELSAW MACHINERY CO.
3476 Field Bldg. Kansas City 11, Missouri

Powerful Black & Decker®
Orbital Sander ONLY \$52.50

44 Sander gives satin-smooth finish on toughest sanding jobs—sands right up to obstructions—sands with, across or against grain! For information write: The Black & Decker Mfg. Co., Dept. S-26, Towson 4, Md.



KING MIDGET
*World's
Lowest
Priced
Car!*



Lower priced, improved performance. Drive it for 75¢ per week. Also KING MIDGET JUNIOR, finely engineered, less than one-third cost of any comparable car, one twelfth cost of large cars. Agents wanted. IT WILL PAY YOU TO GET THE FACTS. Send 25¢ for literature and agents proposition on both cars, or \$1 (refunded first order) for this plus actual assembly book and service manual.

MIDGET MOTORS MFG. CO., ATHENS 2, OHIO

NEW Easy-to-Use SOLDER*



Solders metals instantly
...just apply **Swift**
and heat

Swift is real 50/50 Tin-Lead solder with flux in paste form that makes all kinds of soldered connections permanently—and fast. No separate flux needed. Just apply Swift by squeezing the tube and heat with torch or iron—on small jobs even a match will do the job perfectly. Each tube holds enough solder for hundreds of jobs. Swift has been used by professional plumbers for years. At hardware stores, hobby shops, plumbing dealers, auto stores, 59c.

*Send For Free Literature

HERCULES CHEMICAL CO., INC.
332 Canal St., New York 13, N.Y.



NEW—URANIUM FINDER!



Smaller than a postcard! Fits in any pocket! Only one control—Anyone can use it! Wt. only 1 lb. Guaranteed as sensitive and to find URANIUM deposits as quickly as ANY OTHER GEIGER COUNTER (costing up to \$30.05 or ten times its size, or your money back! Uses flashlight batteries (that last up to 6 months!) Durable plastic case. SUPER SENSITIVE GEIGER TUBE. Self contained 000 volt power unit, tube amplifier, earphone and Uranium test sample. **GOLD PLATED IDENTIFIER.** THIS TINY GEIGER COUNTER IS NOT A TOY—Guaranteed to be all YOU NEED TO PROSPECT FOR URANIUM on lakes, vacationing, fishing or anywhere you get Government is now paying over \$200,000.00 a month for uranium and up to \$33,000.00 for each Uranium discovery. REMEMBER URANIUM CAN BE ANYWHERE! ATOMIC POWER MUST HAVE IT FOREVER! Many inexperienced prospectors have made uranium strikes and SO CAN YOU WITH THIS EFFICIENT TINY GEIGER COUNTER.

SEND ONLY \$5.00 and pay postman \$14.95 plus C.O.D. for postpaid delivery. Free booklet on "Uranium Prospecting and where Uranium can be found in the U.S.A." **ONE YEAR GUARANTEE.** Complete with batteries and full instructions. Don't delay—Order your URANIUM FINDER now—Today.

WESTERN RADIO

Dept. GPS-2

Kearney, Nebr.

NEW
Catalog



X-acto, Inc.

x-acto KNIVES • TOOLS • KITS

for every hobby,
art & handicraft

Designed by craftsmen
and precision-made to
the highest quality
standards.

Write today for our 28-
page, fully illustrated
catalog—only 25c.

48-47 Van Dam Street, L.I.C. 1, New York

FEBRUARY 1956 283

natural
wood
beauty!

plus all the
advantages of

SHEETROCK*

the fireproof gypsum wallboard

Build or remodel with Woodgrained
SHEETROCK. Lend distinction to basement
or attic rooms, libraries or dens with
faithful photographic reproductions of
the finest pine, mahogany or walnut
wood paneling. Woodgrain SHEETROCK
is strong, durable, crack-resistant.

You can apply it yourself!

Just nail easy-to-cut, easy-to-fit
panels to framing members with
matching-color nails. Ask your U.S.G.
building materials dealer about it or
write Dept. PS-1, 300 W. Adams
St., Chicago 6. Also made in Canada
by Canadian Gypsum Company,
Ltd., Toronto and Montreal.

*T. M. Reg. U. S. Pat. Off.



UNITED STATES GYPSUM

The Greatest Name in Building

GREENLEE HANDY CALCULATOR

solves woodworking problems in seconds!

Speed your jobs, get answers to countless building and woodworking questions immediately! Improved GREENLEE Woodworking Calculator converts linear to board feet, gives nail specifications, tool sharpening tips. Compares woods, gives bit sizes for screws, concrete mixes, painting information, etc. Convenient... simple to read. 6" diameter... heavily varnished cardboard. Special offer by the makers of famous GREENLEE tools... **Only 25c** (no stamps please)

TOOLS FOR CRAFTSMEN
GREENLEE

The GREENLEE line of fine tools includes auger bits, electric drill bits, chisels, gouges, spiral screw drivers, drawknives, and many more. At leading hardware and building supply dealers.

GREENLEE TOOL CO.,
2122 Columbia Ave., Rockford, Ill.

GET RID OF RUST IN YOUR HOT WATER TANK

With The Fabulous MAGNESIUM-ANODE® Feridium® FILTER

The Lee Feridium Filter is FULLY GUARANTEED to destroy rust, scale and corrosive particles in any gas, oil, electric or L-P hot water system! The amazing Feridium Filter is the super-charged electrolytic wonder-metal that attracts and absorbs damaging rust particles and destructive scale to keep the water in your boiler crystal-clear at all times! Install it yourself and see how the Lee Feridium Filter reduces heating costs, increases steam pressure, adds extra-long-life to valves. Pays for itself by eliminating costly repairs and extending boiler life.

**NO RUSTY VALVES
NO RUSTY WATER
IN BATHTUB
NO RUST-STAINED LAUNDRY
NO RUSTY SINK WATER
NO RUSTY TANKS**

HOW TO ORDER

20 to 30 gal. tank takes 1 filter coil
To 40 gal. tank, use 2 filter coils
To 60 gal. tank use 3 filter coils

FOR CAR RADIATORS AND COOLING SYSTEMS, TOO!
Just drop Feridium Filter in **ONLY \$1.25**
radiator and forget it! Water never boils, out-see never overheat! Keeps water crystal-clear and rust-free all year long. One filter lasts all year.

*AS DESCRIBED IN BETTER HOMES AND GARDENS

DAVRO CO., 3091 Brighton 5th St., Brooklyn 35, N. Y.

Also Eshelman Adult 2 Pass. SPORT & GOLF CARS

ESHELMAN TRACTORS **LOW AS \$99**

BAIRD, PERRY, COLTRANE, LANE
DODGE, HARRIS, LANE, FORD, HILL
JAMES, KELLY, MORGAN, OHL, TULL

Eshelman Tractors, Trilers, Riding Rotary Mowers for Better Lawns and Gardens. Advertised in (40) HOUSEKEEPING and Leading Magazines. Amazing Savings. Write for Free Literature.

ESHELMAN CO., Dept. R-42
109 Light St., Balto., Md.

A QUALITY SCREW FOR EVERY JOB!

Wood Screws • Machine Screws
Tapping Screws
Stove Bolts • Carriage Bolts

by
SOUTHERN SCREW
Box 1360-P22 Statesville, N. C.

Write today for Free Technical Chart and Illustrated booklet "How Wood Screws Are Made".

BOAT KITS **28 MODELS - 8 to 19 ft.**
\$39 up - FREE FREIGHT

SAVE 2/3!
Easy-to-build
MAHOGANY DECKS & FRAMES
SEND 10¢ for CATALOG
Includes Hardware - Trailers - Fiberglass

Boat Plans - Patterns - Frame Kits

Build over 50 modern boats from large scale plans, available with FULL-SIZE patterns, new PRE-FAB frame kits! All types: from cruisers, 6 to 25 ft. Best buy for Amateurs! SEND 10¢ for CATALOG.

Craft Craft
Tonawanda, N. Y.

How TO SAVE 30% to 40% WHEN YOU BUILD A HOME



3 bedrooms—\$5378



3 bedrooms—\$5898



2 bedrooms—\$4610



2 bedrooms—\$3952

BUILD A READY-CUT

"LIBERTY" HOME!

You can save several thousand dollars by building a Liberty Home! Buy direct from our mill at our low, freight-paid price.

HERE'S WHAT WE FURNISH

- DOORS
- WINDOWS
- SIDING
- MILLWORK
- LUMBER CUT-TO-FIT
- FLOORING
- ROOFING
- MOULDING
- HARDWARE
- PLANS & BUILDING INSTRUCTIONS
- TRIM
- PAINT
- GLASS
- NAILS

Big savings in labor. All materials priced at rock-bottom. No wonder our customers write us that we saved them 30% to 40%. Easy terms—monthly payments. Architecturally approved construction. (Not prefabricated).

What "Liberty" Owners Say!

Saved \$4,000 to \$6,000

"Compared to a local contractor's price to build a home equal to my 'Liberty', I will be saving \$4,000 to \$6,000; so you can see why I have such enthusiasm for Liberty Homes."

VERY EASY to Build

Every step in the building of a Liberty Home is figured out for you, so that all you have to do is follow the drawings and instructions that we furnish you.

Send for Catalogue

Pictures wonderful homes in colors at money-saving prices. Designs to suit everyone. Send 25¢ for catalogue today.

BIG BOOK
of House Plans
in Colors
25¢

LEWIS MANUFACTURING CO.

1362 Lafayette Ave.

Bay City, Mich.

It's QUICKER...Works SLICKER with



Pull headless nails! If they're imbedded, drive jaws into wood, then lock on. Use wood as fulcrum.

Does More Jobs Easier
Than Any Other Tool
Made!



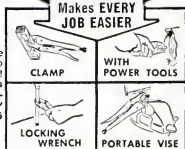
No. 10W, 10
\$2.60

A squeeze of the hand locks jaws onto work with **ton-pressure!** Quickly adjusts for use as All-Purpose Wrench, Super-Pliers, Clamp, Wire Cutter. 7" and 10" cutter optional. \$1.85 to \$2.60 at your dealer.

Made By PETERSEN MFG. CO., Dept. P-2, DeWitt, Nebr.

VISE-GRIP

Makes EVERY
JOB EASIER



IN YOUR CAR RADIATOR... GUARANTEED TO STOP RUST!

WATER STAYS CRYSTAL CLEAR FOR OVER ONE YEAR

Just one can of
MAC'S NO. 13 re-
moves rust and scale
...prevents costly
repairs. Get MAC'S
NO. 13 today.



AT SERVICE
STATIONS EVERYWHERE

MAC'S SUPER GLOSS CO., INC.
Los Angeles 42, California

AMMUNITION



for a fraction of
regular cost

Reload a whole carton for the cost of a few rounds of factory ammunition. Shotgun shells, rifle and pistol cartridges can be reloaded safely and easily with an inexpensive set of famous IDEAL Reloading Tools. 164 page IDEAL Reloaders Handbook ... \$1.00, postpaid. Free folder on request.

THE LYMAN GUN SIGHT CORP.
MIDDLEFIELD, CONN.

WELD

SOLDER

BRAZE

CUT

4 WAY

ONLY
\$14.75
f.o.b. factory

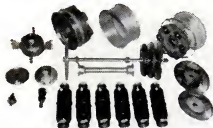
WELDER

Complete with
Twin Carbon Arc
Torch and ac-
cessories ... to
handle all metal-
craft work.

Acclaimed by thousands of Homeowners, Mechanics and Hobbyists as the welder of 1001 uses. Easily operated from properly wired 110 volt AC or DC line. The ideal gift with a life-long use ... Order today on 10 day money back guarantee.

FOUR-WAY WELDER CO., Dept. F3-B
1810 S. Federal St. • Chicago 16, Ill.

TURBINES—NOW AVAILABLE FOR CIVILIAN USE KITS FROM—\$59.50



FEATURES:

- ONE PRIMARY MOVING PART
- NO AUXILIARY COOLING
- USES LOW COST FUEL
- LIGHT WEIGHT SMALL VOLUME
- SELF CONTAINED GEARBOX
- .685 SQ. FT. FRONTAL AREA
- CORROSION RESISTANT CONST.

Having applied mass production techniques with sound engineering we have developed a series of low cost gas turbines. This type unit is applicable to automotive, aircraft, marine, and industrial usage. It is the engine of the future as well as the present. Its ultra-modern design will remain current for years to come.

TRECO PRODUCTS, DEPT. 30, 1364 WOODLAND HILLS DR., ATLANTA 5, GEORGIA

send for
FREE
tool catalog

SNAP-ON TOOLS CORPORATION
8060-B 28th Avenue, Kenosha, Wis.

Send me free catalog.

OCCUPATION

NAME

ADDRESS

CITY

ZONE

STATE



A big, fact-packed catalog full of pictures and tool information ... yours for the asking.

- Snap-on tools help you handle repair jobs faster, easier, better.
- Snap-on tools LAST ... pay for themselves over and over.
- Used and endorsed by America's top-earning mechanics in all fields.
- Start building your Snap-on set with basic units ... add other tools any time.

Snap-on Tools
THE CHOICE OF BETTER MECHANICS

du-rite magnesium LEVELS

UNBREAKABLE
FRAME...
LOW COST



NOW...

A NEW, LIGHTWEIGHT
HIGHLY ACCURATE LEVEL
FOR HOME HANDYMEN... **\$465***

Never before has it been possible to offer a genuine extruded, magnesium I-beam level at such low cost. Designed by one of the world's leading manufacturers of professional magnesium levels, this new du-rite also features replaceable vial assemblies with extra large, glass windows for fast, easy, accurate readability. If you do-it-yourself, do it right with a du-rite. **3 SIZES...18"...24" & 28"**

*Suggested retail price for 18-inch size...
Prices slightly higher in some localities.

AT YOUR DEALERS, or write
J. H. SCHARF MFG. CO. 6120 Binney, Omaha, Nebr.

You Can't **BULLDOG**
Beat... **JACKS**

NEW BULL DOG SCREW TYPE TOP CRANK JACK

- Fits Any Tongue
 - Makes Hitching and Parking One-Man Job
 - Adaptable to Channel, Angle or Wood Tongues Up to 4" Thick
 - Solid Steel Threaded Shaft With 6" Steel Wheel
- With its interchangeable mounting bracket, it is easy to install and move from one piece of equipment to another... handle folds, Model 52-F illustrated \$18.50 F.O.B. Wausau... prompt delivery.

\$18.50

Also full line of trailer axle assemblies and trailer couplers. Write today for FREE Catalog 56-J.

**HAMMER BLOW TOOL COMPANY
WAUSAU, WISCONSIN**

Pocket Hundreds of Extra Dollars With New

AUTO SAFETY BELTS

R.H. Emerson of Ohio
sold 48 Belts
first day out!



G. Krane of Texas
sold 288 Belts
in 3 weeks!



Salesmen urgently needed to fill big demand for new FUTURELINE Safety Belts. 3 average sales in a day can bring you up to \$45.00 cash profit. Big opportunity open for you introducing newest, safest 100% nylon Safety Belts. We give you everything you need to start earning quickly. Write for all details TODAY!

FUTURELINE 173 West Madison Street
Dept. W24, Chicago 2, Ill.

Earn More!

get into **BIG PAY**
ARC WELDING

It's EASY
to do
arc weld-
ing!



It costs little
to own one of
these big capac-
ity Hobart
welders

NEW "Husky-Boy"

200 Amp. air-cooled gas engine
arc welder WELDS ANYWHERE!

Equip your lightweight truck with Hobart "Husky Boy." It's a real money maker on emergency repair jobs. Use it in or out of the shop. Ready on a moment's notice to go to work for you.

BUILD YOUR OWN. with Hobart's "generator only" Simply connect it to a good used auto engine. Make your own portable welder and get in on the extra profits of arc welding.

AC POWER OR AC WELDER. An excellent dual purpose combination. Welds or runs tools, lights, motors independent of power lines. Can be belted or coupled direct to your own gas engine.

TRANSFORMER TYPE AC WELDER. A real welder for production and repair work in shops that have only single phase power available.

300 AMP. ELECTRIC MOTOR DRIVEN portable welder for average welding requirements. Perfect for production, maintenance, repair, tool room work and all general shop welding.

Investigate These Big Money Makers Today!
Mail coupon for complete details.

HOBART BROTHERS CO., BOX P-76
Troy, Ohio, Phone 21223. "One of the world's largest builders of arc welding equipment"



Hobart School of Arc Welding
Learn profitable arc welding at the non-profit Hobart Trade School. Skilled instructors, G. I. approved Low cost.



CLIP THIS COUPON
and MAIL!

HOBART BROTHERS CO., BOX P-26, Troy, Ohio

Without obligation, send complete information on the items checked below:

- ☐ Husky Boy ☐ Build Your Own ☐ AC Welding—AC Power ☐ AC Transformer Type ☐ 300 Amp. Electric Drive ☐ Hobart Trade School ☐ Modern Arc Welding Lessons, \$1.00

NAME _____

ADDRESS _____

CITY _____ STATE _____



Build Your Own



AC Power—AC Welding



AC Transformer



300 Amp Electric Drive

MODERN ARC WELDING LESSONS... 200 pages, fully illustrated, \$1.00



FREE!

☐ Welder's Vest Pocket Guide

THEY'RE **NEW!**



FASTEST-CUTTING JIG SAW MADE! This powerful new Millers Falls tool is a jig saw, hack saw, coping saw, ripsaw, crosscut and keyhole saw all in one. Makes curved, straight or irregular cuts in wood, metal, all kinds of material—in places often inaccessible to other saws! Exclusive design features and special blades result in far greater cutting speed than any similar saw.

No. 480 Dyno-Mite Electric Jig Saw \$44.95

THEY'RE **DYNO-MITE**



FOR THAT PROFESSIONAL FINISH! This new Millers Falls Orbital Sander finish-sands furniture, cabinets, interior trim . . . removes paint, varnish or surface imperfections . . . all without tracking, scoring or burning surface. High-speed orbital action permits sanding with or across the grain. Light weight makes it easy to use an overhead and vertical as well as horizontal surfaces.

No. 580
Dyno-Mite Electric Orbital Sander \$44.95

THEY'RE

Millers Falls

**Finest Power
Tools Made**



FREE AT YOUR HARDWARE DEALER'S
Ask for these folders on the whole power-packed line of Millers Falls Dyno-Mite electric tools including the remarkable new Dyno-Mite Power Workshop, or write direct.

MILLERS FALLS CO. • Dept. PS-12 • Greenfield, Mass.

**spray paint it
yourself!**



Faster . . . better . . . easier!

Anyone can quickly learn to do a professional job of spray painting. Takes less skill than brush painting. 4 to 5 times faster. **Pressure Queen** pictured. Only 4-cylinder portable air compressor. Continuous air flow without pulsation. Sprays paint undiluted—

Priced low. See dealer or write 151 Railroad Ave., Harrison, Ohio.



CAMPBELL-HAUSFELD

ONLY \$495
Unbeatable
FREE FOLDER



BOAT KITS

12 Models as low as \$39.95 (freight included). Fiberglass boat covering kits, marine supplies, etc. Free folders.

TAFT MARINE WOODCRAFT

Dept. PS-2, 636-39th Ave. N.E., Minneapolis 21, Minn.

NEW! GIANT AUTOMOTIVE CATALOG

1956 Edition! Everything for car, truck, custom-styled car, hot rod . . . at **LOWEST PRICES!** Save up to 50% on all parts, accessories! Only complete automotive buying guide . . . 50,000 items . . . 164 pages! Thousands of hard-to-find parts, equipment, parts for 1920 to 1956 models; **Holley-wood accessories** never before offered; **hi-speed parts**. Send your name and address and \$5e (refundable with first \$5.00 order) to:

J. C. Whitney & Co., 1817 Archer, Dept. T-2, Chicago 16, Ill.



250 POWER



Complete Telescope Lens Kit **only \$3.49** postpaid

Cosmos Space. Explore the Universe, Planets, Moon craters, New Stars etc. Complete Lens Kit consists of 80 inch focal length ground and polished objective lens, eyepiece lenses for 50 POWER, 100 POWER, 150 POWER, 200 POWER, 250 POWER, and all accessories—lens fittings. Easy to make from simple step by step instructions. (Tripod and mount not included.)

BUSSE SALES CO., Hartford, Conn., Dept. PS40

Now Change Speeds Instantly on all Machine Tools

with "Universal (Infinitely) Variable" with instant fingertip control. Uses standard "A" belts.

Operates without stopping motor. Aluminum construction, saves tools and belt changing time. May be installed quickly in your present set-up. No extra bracket required on 2 1/2" drill press column. Extra bracket required for installation on lathes, and other machine tools. Ideal for conveyors, experimental devices, and hundreds of other uses.



Unit Complete \$18.90
Angle Bracket Extra \$3.90

Send check or MO:
Delbros Machine & Tool Co.
2535 Tilden Ave., Brooklyn, N.Y.

NEW! Make your own hi-fi speaker cabinet with Weldwood!



Model KD1
The Patricia IV



Model KD4
The Regency



Model KD7
The Baronet



Model KD2
The Georgian



Model KD5
The Empire



Model KD3
The Centurian



Model KD6
The Aristocrat

7 Electro-Voice models for single- or multiple-speaker high-fidelity units—kits start at \$24; Do-It-Yourself books including plans, \$1.00 (except Patricia and Georgian, \$1.50; Baronet, 75¢).

Here's why the new plans and kits by Electro-Voice, Inc., specify beautiful Weldwood plywood as ideal material for speaker enclosures.

Nothing equals wood for fine sound reproduction. Weldwood plywood preserves the precise sound characteristics that Electro-Voice has designed into your cabinet. For Weldwood resists warping, swelling and shape changes—distortions that may ruin hi-fi sound. And Weldwood's beauty matches the beautiful music you'll enjoy.

Weldwood® Plywood

A Product of

UNITED STATES PLYWOOD CORPORATION

In Canada: Weldwood Plywood, Ltd.

WELDWOOD—The Best Known Name in Plywood

Electro-Voice kits come in 7 different models. Kits contain everything you need—Weldwood plywood, framing and finishing materials, and step-by-step, easy-to-follow directions. If you wish, you may buy only the instructions—then buy Weldwood plywood at your own lumber dealer's.

Mail the coupon today for more information

United States Plywood Corporation PS 2-56
Box 61, New York 46, N. Y.

RUSH ME free literature on hi-fi speaker enclosures I can build with Electro-Voice kits or plans, and Weldwood plywood.

NAME.....

ADDRESS.....

CITY.....STATE.....

LOOK!...NEW Electric

Lightning & Change

ROTOTILLER®

A Real Do-Gooder for Outdoor-Indoor House and Garden Do-It-Yourself Jobs. Inexpensive, Quick, Snap-on Attachments. Light Weight 15 lbs. Powerful Motor 3/4 h.p.

LOW COST Power Tool of 101 Uses

There never was a machine like this Electric ROTOTILLER

... not a toy, but a whole kit of outdoor-indoor power tools. Saves time, heart, back.

It digs, hoes, weeds, cultivates,

mows, trims, edges, cuts light brush,

saws 20" logs, even shovels snow.

Indoors, it sands, polishes floors, converts to bench grinder, power drill. Get complete ROTOTILLER story... use coupon for 68 page FREE illustrated book. No obligation—except ours to back up these claims.

Mail Coupon for FREE BOOK

HOW TO DO
WONDERS
With a
LITTLE LAND

ROTOTILLER, Inc.

Dept. E1, Troy, N. Y.

Please send me FREE 68 page ROTOTILLER book and name of nearest dealer.

Name.....

Address.....

City.....County.....State.....

\$500 in 4 months spare time

is what I made with the FOLEY

... and I can sharpen all power mowers. No one can go wrong with the Foley machine."—V.J. Patterson wrote us.

Get in this profitable business where you take in CASH right from the start. 10¢ of every dollar you take in is YOUR profit! The Foley Lawn Mower Sharpener handles all makes of hand and power mowers—up to 3 or 4 per hour. Hand mowers run \$1.50 to \$3.00—power mowers \$5.00 to \$8.00.

FREE PLAN shows how to start—no experience needed. Foley prices are low—easy payments available. Get set now for big profits this Spring and Summer. Send coupon today—no salesman will call.

LAWN MOWER SHARPENER

"In my home town of 5,000 I sold for the Foley 4 or 5 times over the first season. I also put a \$105 oil furnace in my new home." B. Mathews.

"We sharpened nearly 1000 mowers our first season and gained a reputation for the best work." J.W. Kemper.

Send for FREE BOOK
"HOW TO SHARPEN POWER MOWERS"



FOLEY MFG. CO., 2086 Foley Bldg., Minneapolis 18, Minn.
Send FREE BOOK "How to Sharpen Power Mowers", and FREE PLAN on lawn mower business.

Name.....

Address.....

**on autos, bikes, lawnmowers,
outboards, locks, plumbing . . .
anything metal!**

**LIQUID
WRENCH®**

**loosens
rust and
corrosion
in
seconds!**

**3 oz. CAN
30c**



Cleans, Protects, too!



This powerful blend of quick-acting solvents is absolutely safe for all metals and alloys, even finest finishes. Wonderful for cleaning guns, rods, reels, metal equipment of all kinds. Helps prevent new rust and corrosion.

AT HARDWARE STORES, SERVICE STATIONS AND GARAGES EVERYWHERE

Stop Noisy, Leaky Toilets!

SEALMASTER®

Guaranteed 4 Years!

Quickly pays for itself in water saved. Easy to install. **FITS ALL VALVES**

AT HARDWARE STORES EVERYWHERE

Manufactured by

RADIATOR SPECIALTY COMPANY
Charlotte, N. C.

2089

For Sanding, Grinding, Polishing, Carving, Burnishing, Etching Milling, Cleaning, Cutting Off, Hole Cleaning, Deburring, etc. Contains Grinding, Polishing Cut Off and Buffing Wheels, Sanding Cartridges and Discs, Steel Cuts, Mandrels, Burnisher, Mounted Stones, Knife-edge rubber wheels. All with 3/32" Mandrels. The complete accessory for any small job. Reg. \$6.00. OUR PRICE **\$1.98** plus 25¢ P.P.


12 HONING STONES

of Various Types—Sizes—Shapes
Govt. Surplus worth many times our low price. A varied assortment of sizes, shapes and lengths for sharpening Tools; Instruments. Fish Hooks. Knives, Cutlery, other uses. Also used for de-glight scratches. Our assortment permits one to get places. Made to sell for up to 75c each. 12 stones **\$1.98** plus 25c P.P.

18 MOUNTED WHEELS only \$1.98

Assorted shapes and sizes. ALL WITH $\frac{1}{4}$ " SHANKS. Designed for Grinding, Buffing, Cleaning, Deburring, Sharpening, Polishing, Sawing, Carving, Forming, Shaping, etc. These precision tools permit delicate operation on plastics, wood and metals. Easy access to hard-to-reach places. All 18 assorted wheels only **\$1.98** post paid. A regular \$9.00 value.

ROTO HOLESAW for Electric Drills



Four Different Size Holes With One Holesaw! Cuts thru one any $\frac{3}{4}$ " Stock . . . Wood, Plastic or Metal! The one and only holesaw attachment for $\frac{1}{2}$ " electric drills at this low price! Cut $1\frac{1}{2}$ ", $1\frac{1}{4}$ ", $2\frac{1}{2}$ " and $2\frac{3}{4}$ " holes thru any $\frac{3}{4}$ " stock. Light but rugged aluminum arbor and 4 saw blades of top quality, high carbon steel furnished. **\$4.95** complete, plus $35c$ PP.

MONEY BACK GUARANTEE

MATTHEW DAY CO., INC.

Dept. P539 DUMONT, NEW JERSEY

NEW "WIZARD" TOOL DRILL GRINDING GUIDE

MAKE OLD DRILLS LIKE NEW...

For repointing dull end broken twist drills up to 1/2" in diameter. One piece cast Aluminum. Simple. Anyone can use it. Order yours-to-day. \$1.00 post-paid.



BRASS CASTING CO.
P. O. Box 3056 Memphis 9, Tenn.

\$1.00
POSTAGE

PRECISION-BUILT

Cabinet-making at its finest gives you a Chest to be proud of. Free Catalog to machinists and tool-makers.

GERSTNER TOOL CHESTS
556 Columbia St. Dayton 7, Ohio

SURPLUS SALE

\$39.50 NEW TOOL POST GRINDERS
REGULAR PRICE \$125.00

1-6 H. P. MOTOR .
TAKES WHEELS UP TO $\frac{1}{2}$ " x 4"
EXTRA GRILL EXTERNAL OR
INTERNAL \$29.50

MONEY BACK GUARANTEE

EDWARD J. NOLAN, PULASKI NEW YORK

STUDENTS • ARTISTS • DRAFTSMEN • ARCHITECTS, ENGINEERS, CONTRACTORS, SALESMEN



DRAFTETTE
CUTS DRAWING TIME
IN HALF, IMPROVES
ACCURACY—NEATNESS

Speeds up sketches of any kind! A precision-accurate portable drafting machine that clips on any tablet, sketch pad, notebook. Covers area to 11" x 17". Eliminates need for ruler, protractor, T square, triangle. Compact, lightweight, made of sturdy anodized aluminum. Carry in pocket, briefcase, etc. **\$2.95**
Last a lifetime. Order Now! Cash, Ch., M.O.,

Dealer jobber (nq. invited).

BAUMBACH ENGIN. CO.

Dept. PS-62—10147 Halbrecht
San Fernando, California

Do it yourself with

REYNOLDS

DO-IT-YOURSELF

ALUMINUM

There's *double* enjoyment when you make anything for your home with Reynolds *Do-It-Yourself* Aluminum . . . the reward of accomplishment, plus the pride of owning beautiful, useful furnishings you *thought* you couldn't afford. Hard to make? Not at all. One easy step . . . then another . . . and your lamp or buffet, primitive or wall sconce is complete, and ready for a *lifetime* of service, thanks to aluminum.

oh yes you can

Reynolds Plans and Easi-Bild* Patterns are easy to follow. For the name of your nearest dealer, call your local Western Union "Operator 25." Select your plans and patterns there or write for illustrated catalog.

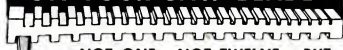


REYNOLDS METALS COMPANY

2493 South Third Street • Louisville 1, Kentucky

*T.M. Easi-Bild Pattern Co. • Available in Canada

**CUT PERFECT GROOVES
WITH *Warren* WASHERS
ON YOUR SAW BLADE!**



**NOT ONE — NOT TWELVE — BUT
40 DIFFERENT CUTS**

Engineered to cut clean, accurate, parallel grooves—just dial the desired width—40 micromatic adjustments—leave on saw for straight cuts. **GUARANTEED.** At your dealers or order direct. Arbor sizes $\frac{1}{2}$ ", $\frac{3}{4}$ ", $\frac{1}{4}$ ", 1". Send for free booklet



WARREN WASHERS COMPANY

Dept. 42, Box 98, North End Station, Detroit, Michigan

Strip off OLD finish

Make it like NEW

It's easy to make furniture, wood trim, floors, etc. like new. Strip off the old finish with quick-working Wonder-Paste. Applied with a paint brush. Won't run on upright surfaces. Softens paint, varnish, enamel so it comes off easily. Leaves perfect surface for new finish. At paint and hardware stores.

• Write for leaflet and advice on your removing problem. Wilson-Imperial Co. 121 Chestnut St., Newark 5, N. J.



WONDER-PASTE 5 MILLION CANS SOLD

**EARN GOOD MONEY-Spare or Full Time
IN A BUSINESS OF YOUR OWN...**

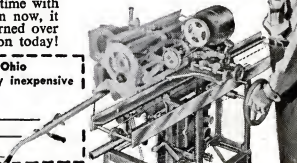
SMALL INVESTMENT — NO EXPERIENCE NEEDED

Thousands of men are making big money in their own business. You too, can have a fine income with an assured future in spare or full time with the Universal lawn mower grinder. Investigate our success plan now, it includes everything you need plus facts on how others have earned over \$3,600 in one season, working part time. Act now! Mail coupon today!

ROGERS
MANUFACTURING CO.
Lindsey, Ohio

ROGERS MFG. CO., Dept. P-26, Lindsey, Ohio
Gentlemen: Rush me FREE details on easy inexpensive way to get into my own business.

Name _____
Address _____
City _____ State _____



Mammoth 1956 Wholesale Tool Catalog

\$1
puts You In
Business

The opportunity now
awaits you to own
and operate your own
business on a part
time or full time
basis in the lucra-
tive field of HARD-
WARE, HAND
TOOLS, FANS,
POWER TOOLS,
MOTORS, PAINTS,
etc., or BUY
TOOLS FOR
YOUR INDUS-
TRIAL OR IN-
STITUTIONAL
USES.

Buy Nationally Advertised Tools
for Resale or Institutional Use
NO INVESTMENT REQUIRED.
BUY AS YOU NEED IT. A
MILLION DOLLAR INVEN-
TORY AT YOUR FINGER TIPS.

\$1.00 refund
on first
purchase
or refund
if you
are not
100%
satisfied.



**JUST FILL OUT
COUPON**

SILVO HARDWARE COMPANY

Dept. PS-2, 108 Market St., Philadelphia 6, Pa.

I am enclosing \$1.00. Rush me your dealer's card and
big Catalog Today. If I am not completely satisfied with
your plan, I understand that I can return the Dealer's
Card and Catalog for refund, and if I decide to order,
my \$1.00 will be deductible from my first order.

NAME

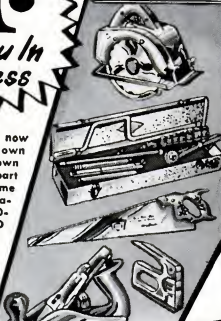
ADDRESS

CITY ZONE STATE

TOOL CATALOG



YOUR NAME



**Discount
UP
TO 50%**

Every one needs
tools. Meet the de-
mands of the grow-
ing "Do-it-Yourself"
markets. Sell direct
from the jumbo
buying guide—your
cost is known only
to you.

ENCLOSE \$1.00 FOR
DEALER'S CARD & 1956
MAMMOTH TOOL CAT-
ALOG.

KEEP ALL SAWS SHARP



SO EASY: With this new filing jig and jointer anyone can now sharpen any hand saw like new! When file hits hardened steel rollers teeth are finished and EXACTLY SAME HEIGHT! All teeth cut and saw runs true and smooth. Jig and instructions \$2.95 postpaid. Free literature.

JOINT & SHARPEN CIRCULAR SAWS



SUPER SAW FILER NO. 6

Automatically controls
Sensational New Super Filer No. 11 joints and sharpens both hand and circular saws 6" to 10" with all teeth the correct height, depth, pitch and bevel. Easy to use—when file hits hardened steel rollers teeth are finished. Saw runs true and smooth with no side pull. Complete with special 8" file \$9.95 ppd.
TRU-CIRCLE saw set automatically sets teeth at 10° or more \$2.95

Perfect bevel and angle maintained, and foot-proof depth control. All up. Crosscut and Hand saws. Precision made and calibrated in-house setting at desired angle. Can be used in any vice or clamp. Com- plates with file only. **SEND FOR FREE CATALOG \$6.50 PPD.**

A. D. MCBURNEY, 5908 Hollywood Blvd., Hollywood 28, Cal., Dept. 5-26

OVERLOAD SPRINGS

\$9.95 Per Pair
postpaid
2000 LB. SIZE
\$11.95

For cars and trucks. Front and rear. Gives 2000 lbs. extra capacity for all 1/2, 3/4, and 1 ton trucks; 500 or 1000 lbs. extra for all cars. Easily installed. Guaranteed. State make, model. Dealers wanted.

BRINKMAN MANUFACTURING CO.
2315 Clay Dept. 6-F Topeka, Kansas

DITCH-WITCH TRENCHER

Portable DITCH-WITCH digs 4 1/2" or 6" clean, even ditches to 36" depth in all types of soil. Four rugged models. Complete unit — self-propelled. OUTDIGS 8 MEN — Write for Illustrated Literature

The CHARLES MACHINE WORKS
637 B Street Perry, Oklahoma

DRAINS cellars, cisterns, wash tubs; IRRIGATES - CIRCULATES - SPRAYS

\$6.95

1,001 USES—HOUSE, GARDEN, FARM
Original All-Purpose Pump has 3,000 GPH capacity, 550 GPH 50' high; or 1500 GPH from 25' well. Use any 1/8 to 3/4 HP motor. Stainless steel shaft. Oil-less bearing. 1" inlet; 3/4" outlet. Motor coupling included.

DOES NOT CLOG OR RUST
Postpaid if cash with order. (Wash of Miss. add 50c.) **MONEY BACK GUARANTEE.** Larger centrifugal Pumps and Gear Pumps in all sizes. **LABAWCO PUMPS, Belle Mead 3, N. J.**

BUY DIRECT..SAVE!

Big Discounts on TILLERS · TRACTORS MOWERS

20" rotary mower
12" tiller

8 1/2 H.P. Riding Tractor \$488.00

- Complete line of 2-wheel and 4-wheel tractors and implements.
- Clean cutting rotary power mowers handle all grass and weeds.
- Spade, hoe and rake in one operation with 12" or 8" tiller. Assembly-it-yourself Kit only \$59.00 less engine.

Write for complete catalog.

RED-E GARDEN TRACTORS
RICHFIELD 10, WISCONSIN

GIGANTIC MAIL SALE

ARMY POWER PLANTS

- Marvelous buys in new condition Govt. surplus plants and generators. We pay freight!
- 1000-w, 115-v, 60-c, \$149.50
- 2000-w, 115-v, 60-c, \$289.50
- 3000-w, 115-v, 60-c, \$349.50
- 7500-w, 115-v, 60-c, \$599.00
- 3000-w, DC generator \$58.75

Send for free bulletin

AUTOMATIC REMOTE CONTROL SWITCHES

- Amazing electro-magnetic switch with dial. Any circuit from 1 to 100 can be selected simply by dialing the number. Will work up to 20 miles. Used, excellent.
- Fine incandescent, phone systems, experimental, etc. New Cost Over \$200. Sale, Prepaid

..... \$13.71

MOTOR DRIVEN WINCH

- A 4-star special! Rugged electric motor-driven winch ideal for contractor, builder, farmer, boats, docks, etc. Motor is 115-v, 60-c, G.E. squirrel cage induction type. Reversible, runs winch in either direction. Load capacity 1000 lbs. Drum capacity 100' of 1/4" cable. Cost Govt. over \$495. SALE, Prepaid (less cable) \$69.50

GOV'T STEEL TOWER

- Excellent for TV, amateur radio antennas, advertising signs, 30-ft. tall.
- Copper-bearing steel, hot-dip galvanized. Has ladder for climbing and servicing antenna, etc.
- Units can be combined to 150' ht. Face width 12". Complete with guy cables, hardware, anchors, etc. 250 lbs. Cost Govt. over \$150. SALE, FOB our warehouse Vaneburg, Ky. \$31.95

HYDRAULIC BARGAINS



- Pump, 1000 lbs., 12 g.p.m., 400 r.p.m. 1 1/2" lb. lift \$45.50
- Cylinder, 3" bore, 24" stroke, 7000 lb. lift \$39.50
- Cylinder, 2" bore, 10" stroke, 3141 lb. lift. Sale \$16.50
- Control Valve, For single or double acting cylinders. Sale \$17.98
- Pressure Gauges, 1000 lb., 1500 lb., 2000 lb. \$3.49

6-VOLT HYDRAULIC PUMP

- Complete hydraulic system. 6-v DC motor operates from truck battery. Drives 2,500 lb. per sq. in. pump. Has control valve, etc. • Use for dump trucks, snow plows, backhoes, special machinery, etc. Leading make. F.O.B. Wt. 48 lbs. List \$121.50. SALE \$42.95

CONTRACTOR-ARCHITECT LEVEL

- Excellent highly accurate professional instrument made by leading manufacturer. Ideal for setting foundation, grading, farm contouring, surveying, etc.
- Powerful erecting optical telescope, polished graduated degree scale, sensitive spirit bubble, etc.
- Furnished complete with 8 1/2-ft. 3-sec. red, fine tripod and polished wood carrying case. Our 4-star buy! Prepaid to you, \$42.95

IRRIGATION PUMP

- 2 1/2" size, 16,500 gph
- Brand new Navy bronze ball bearing hi-capacity centrifugal. Wonderful small farm and truck irrigation, many industrial uses.
- Capacity to 280 gpm. Pressure to 65'. Speed 2100-2700. Clock-wise rotation. Complete with 6" pulley. Wt. 40 lbs. Size 10"x11"x9". Inlet 2" outlet 2"
- Note—of these units driven by single engine will deliver almost 600 gpm or 31,000 gph. Natl. Adv. list \$98 each. SALE, Prepaid \$44.75

AIR POWERED TREE TRIMMER

- Simply press button. Powerful air cylinder. Cuts limbs to 7/8" or better. Operates from any small home air compressor. Weighs 40-70 lbs. air 10'. Res. list, \$69.50. SALE, \$15.37 Ppd.

SPECIAL OF THE MONTH! GOLF CAR BATTERY MOTOR



Govt. Surplus 1300 available

- Powerful, brand new, gear reduction, slow-speed battery motor. Runs on ordinary 12 or 24-volt storage battery 200 to 400 R.P.M.
- BUILD YOUR OWN Self-propelled Golf Car Warehouse carts Store lift trucks Electric boat winch Boy's microlite auto Garage door opener Motorized инвалид wheel chair
- Many other private and industrial applications. Unit consists of powerful direct-current, heavy duty, finest Timken roller bearing motor with built-in precision 16 to 1 gear reduction. Output shaft is 1" diameter. Speed is easily controlled, 12 inches long 8" diameter.

Exceptionally low cost. Will pull two men in cart at speeds up to seven miles per hour. This expensive unit was designed for a high torque aviation application. It is exceptionally powerful and will last for years. Very efficient. Draws minimum current and batteries require minimum charging. Buy promptly! This is already one of our most popular items. Instructions furnished. Wt. 22 lbs.

Gov't cost over \$200.00

Special F.O.B. Lincoln \$13.46

AIR COMPRESSORS—TANKS, Etc.

- Save to 70% on air fittings, tanks, compressors, etc. See our catalog.
- Piston Air Compressor, 150 lb. \$18.91
- Air Corp 300-lb. Pressure Tank \$6.79
- Auto Pressure Switch for Motor \$4.95
- Professional Paint Spray Gun \$9.95
- Detco Air Kit complete \$45.49



SPECIALS FROM PREVIOUS ADS

- AC-DC Power Rectifiers (F.O.B.) \$15.61
- Army Power Heater (oil) (\$190.00) \$49.50
- Antenna Rotator—110 volt (\$595.00) \$49.49
- Electric Irides—110 volt (1/2" \$42.00) \$13.55
- Dual Amplifier (\$295.00) \$23.51
- Campers Power Plant—28 volt (\$425.00) \$69.80

We pay transportation on except where stated. *FOB Lincoln. Write for large price list.

BURDEN SALES COMPANY
824 "O" St., LINCOLN, NEBR.

Professional Mechanics' TOOL CHEST



FOR YOUR HOME WORKSHOP

This may be the lowest cost full-sized chest in America! 4 sliding drawers in blue-gray rugged steel cabinet, 26" x 12 1/2" x 12 1/2". Free bulletin describes this and 12 other models!

\$24.75 F.O.B. ST. PAUL

HUOT MANUFACTURING CO.
532 No. Wheeler St., St. Paul 4, Minn.

DO IT YOURSELF

It's Easy With ...



Soldering's really o "cinch" ... when you use time-tested, reliable KESTER ... available everywhere.

FREE! "Soldering Simplified" ... 16-page how-to-solder booklet. At your dealer or write direct.

KESTER SOLDER COMPANY
4254 Wrightwood Avenue Chicago 39, Illinois

NOW! HOME CRAFTSMEN THIS PROFESSIONAL ARC WELDER

EASY TERMS ONLY \$98.50 F.O.B.

Now you can own a Trindl full 125 amp Industrial Welder at a price far less than smaller machines. With a Trindl 125A you can weld metals up to 1/2 inch thick. Operates off either 110 or 220 volt line, properly wired, 16 heat stages from 20 to 125 amps. Make and repair anything of metal around the home, garage, farm or shop, like a professional. No previous experience or training needed. Full "do-it-yourself" instructions with each machine. Complete only \$98.50 f.o.b. factory, or write for details. Trindl manufactures a complete line of heavy duty welding machines. Dealer inquiries invited.

TRINDL PRODUCTS Ltd., Dept. T 3-B
1807 So. Clark St., Chicago



Guaranteed 12 MONTHS CONTINUOUS OPERATION

FREE WRITE FOR COMPLETE DETAILS AND EASY PAY PLAN



At Last!
The NEW
RECLAMO
A Wm. Schwolge Product

ELECTRICALLY HEATED
(Automatic Control)

Oil RE-REFINING Filter

For CARS—TRUCKS—TRACTORS

It's HERE! After many years in development—NEW Electrically Heated RECLAMO—fully tested and GUARANTEED—the most efficient motor oil filter available. Filters and RE-REFINES OIL as you drive (by utilizing electric heat). Keeps oil at peak lubricating quality at all times. Proves beyond question U.S. Bureau of Standards (But 86) statement "Oil Does Not Wear Out Mechanically."

New RECLAMO

Eliminates All Needless Oil Changes!

REMOVES SOLIDS by filtration—REMOVES WATER by evaporation—PREVENTS excess fuel dilution—PREVENTS acid and sludge formation—MAINTAINS stable viscosity.

NEW FEATURES: #1. Electrically heated from generator. #2. Thermostatic control prevents overheating. #3. Dual Flow permits oil by-pass when filter is clogged. #4. New non-corrosive steel body built to last a lifetime. #5. Adjustable hinged mounting bracket, simplifies installation or transfer to other equipment.



Write at once for illustrated folder and 50¢ MONTHS NO-RISK TRIAL OFFER. Latest edition "Oil Facts", now in preparation, will be sent FREE later.

Reclamo Co.

6251 Touhy Ave., Dept. S-26, Chicago 30, Ill.

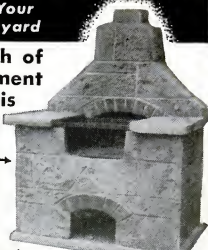
DISCONTINUED
Direct shipment
MODEL.

RECLAMO OWNERS and DEALERS—Turn in your old direct-shipment, manifold-heated "Reclamo" (new or used) for "trade-in" allowance on the new model. Details on request.

**MANUFACTURE THIS BEAUTIFUL
CONCRETE OUTDOOR FIREPLACE**

**Right In Your
Own Backyard**

**\$4.00 Worth of
Sand & Cement
produces this
Attractive
Fireplace.**



**Sells on Sight
from \$60. to \$80.
Easy to start your
own Profitable
Business.**

The General Fireplace
Molds and Process are the most
amazing and foolproof ever invented.
Simple to operate. Two men can produce five fireplaces a day.

BIG DEMAND!!

Sell all you produce to Department Stores, Homeowners, Parks, Nurseries and Picnic Groves. Fireplaces sell on sight. No experience necessary. We supply full operating instructions and equipment plus the know-how that spells BIG PROFITS. This is an outstanding opportunity for men of vision and small capital to get into a busy rich paying field. Don't delay, be the only exclusive manufacturer in your own home town. Mail coupon at once for full details as to how you can reserve your territory. Molds sold only on exclusive franchise.

GENERAL ENGINES CO., Inc., Dept. SF-26
ROUTE 130, THOROFARE, NEW JERSEY

Mr. Tor of Philadelphia writes:
Sold 250 in first 4 months. Selling
to Sears Roebuck, John
Wanamaker, and Gimbel Bros.
in Philadelphia area.

Name
Address
City Zone
State

MODERN

LAWN MOWER SHARPENER

**COMPARE
BEFORE YOU BUY**



Write for
free
booklet
11R

Oil remains in engine
while sharpening. Bed
knife sharpened in same
centers — no attachments
needed.

Start your own
business—increase
your income

Sharpens any mower in
ten to twenty minutes.
Handles complete assembly
of all reel types including
36 in. power mowers. Handle, wheels,
roller, and engine are
not removed.

MODERN MFG. CO.
160 N. FAIR OAKS, PASADENA, CALIF.

\$26300
F.O.B. PASADENA

SHEET METAL BRAKES

Forms angles, locks, pans, etc.
New eccentric clamps. All steel
construction. Size 15"—16 gauge
steel, \$31.50; 30"—22 ga. \$43.50;
48"—24 ga. \$60.00.

14 ga. open end Shear, 6" blades
Compound lever.....\$29.00
Angle Shear, 3 adj. gauges, 7"
—16 ga.....\$16.50



ORDER DIRECT OR SEND FOR CATALOG
VYKE MFG. CO. 4158-N Jason St., Denver 11, Colo.

**ENJOY TRAVELING WITH AMERICA'S FINEST
AUTO COMPASSES**



TRAVELITE \$5.95
(ILLUMINATED)
GUIDEWAY \$4.95
(NON ILLUMINATED)
ONLY COMPASS
APPROVED BY
AUTO MAKERS

DINSMORE
Shows you the right way
— the short cuts. Always
accurate and dependable
anywhere. Fits all cars.
Send for free folder —
"Facts, Knives and Com-
passes" and name of near-
est dealer.

DINSMORE INSTRUMENT CO., 1814-23 Kelso Street, Flint 1, Mich.

ARRO-PING

Guided-flight accuracy — bullet-like
power for target and small game!
Quiet—fun in rumpus room or
patio, on picnics, in areas
closed to firearms! Safe
to carry in car. Econom-
ical—use arrows over and
over!

ARRO-PING CO.
P.O. Box 779-N
Colorado Springs 2, Colo.



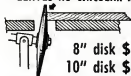
Improved Model
\$1.25
postpaid
with 5 arrows
Extra arrows,
10 for 75¢
20 for \$1.25 pdd.

UNIQUE CONICAL SANDING DISK

HANDY SANDY
Patent Pending

Does perfect jointing—ideal for
difficult jobs. No sandpaper waste
—applies evenly to both sides.
Finishes wood or plastics. Takes
substantial cuts without damaging
sandpaper. For tilting arbor or
die saws. Aluminum alloy, pre-
cision-machined and balanced.
Money back guarantee.

**SANDS BEVELS AND SQUARES—
LEAVES NO CIRCULAR MARKS**



8" disk \$4.95
10" disk \$5.95

State arbor size when ordering.
PREPAID—with sandpaper on
disk.

Bell Enterprises, Dept. C, 9405-45th Ave. N. E., Seattle 15, Wash.

GOV'T SURPLUS BARGAINS 90% Off!

ORDER DIRECT! WE PAY SHIPPING.
MONEY BACK IF NOT SATISFIED.

ELECTRIC MOTORS



Delco #7040: 1/10 hp, 2500 rpm, continuous field high torque 5.4 amps, 24v. Cost gov't app. \$55; full price (brand new) \$5.00.

FOUR-WAY SELECTOR VALVES



#1-S: Open Center Type for use with one double action hydraulic cylinder. Built-in relief and metering valve, 3/8" A.C. fittings. Cost gov't app. \$90; now \$7.95.



#2-S controls 2 double-action hydr. cylinders. 3/8" A.N. fittings. Cost gov't app. \$110; now \$10.

#4-S: same as above, but controls 4 cyl. Cost gov't app. \$130; now \$12.50.

HYDRAULIC CYLINDERS



#H-1: Bore 2 3/4", shaft 1 1/4", length 26", stroke 15 1/2". Cost gov't approx. \$150; now (brand new) \$15. Same type, but 19" stroke: \$19.50 new, \$12.50 used.



#H-2: 2-way; bore 2 3/4", shaft 1 1/4", stroke 11", 3/4" tube fittings; fork mounting (may be cut off). Cost gov't app. \$125; now \$12.50 new, \$10. used.

#H-3: 2-way shaft; bore 2 3/4", stroke 4". Cost gov't app. \$86; now \$9.95.

Send check, cash or money order to

WESTERN AIRCRAFT PARTS, Dept. PS-2

26003 S. Normandie

Harbor City, Calif.



LEFAX TECHNICAL DATA BOOKS

POCKET SIZE • LOOSE LEAF

Printed on loose leaf, 6 hole, 6 1/2" x 3 1/2" bond paper, each book contains about 140 pages of technical data, condensed, accurate, essential, for student, engineer, technical worker, business man. **\$1.25 each**

Architecture	Surveying	Mech'l Drawing	Metallurgy
Home Heating	Surveying Tables	Machine Design	Hydraulics
Illumination	Highway Eng'g	Machinist's Data	Radio
Electrician's Data	General Math	Mech. of Materials	Television & FM
Builder's Data	Math Tables	Pwr. Trans. Mach.	Electricity, AC
Lumber Data	Physics	Thermo. Tab. &	Electricity, DC
Air Conditioning	Trig-Log Tables	Charts	AC Motors &
Building Constr.	Gen'l Chemistry	Phys. & Thermo.	Gen'l.
Reinf. Concrete	Chemical Tables	Data	Transformers.
Piping Data	Analytic Chem.	Metals	Relays & Meters

Write for FREE catalogs (20001atins). See how helpful LEFAX can be to you. Send \$1.25 book, or \$6 for any five books to

LEFAX PUBLISHERS, Dept. PS-1, PHILADELPHIA 7, PA.

A PRECISION LEVELING INSTRUMENT for only \$1295

With the New LEVELALL one man can do the work of two men and a transit, quickly, easily, accurately. All alone you can speedily level points for footings, forms, piping, batter boards, sills, lintels, floors, ceilings, roads, driveways, lawns — any type of construction work. Send for Free booklet or, better yet, order a DeLux Levelall today.

Name _____
Street _____
City _____ Zone _____ State _____

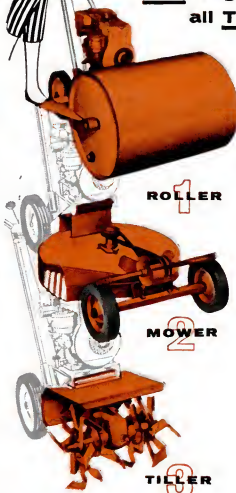
☐ Mail 75' DeLux Levelall @ \$12.95 ☐ Regular 50' model @ \$9.95 ☐ Ship postpaid full price enclosed
☐ Ship C.O.D. Money-back satisfaction guaranteed.
LEVELALL 81-B Webster Street, Rockland, Mass.



Terro-Tiller

GEORGE

ONE engine drives all THREE



ROLLER

MOWER

TILLER

• switch attachments in 49.50

GEORGE

YOU CAN DEPEND ON GEORGE FOR GOOD DESIGN, GOOD PERFORMANCE IN LAWN AND GARDEN

Perfect lawns are easy with the new, self-propelled Terro-Tiller. Just wheel the unit up to the attachment you need (no lifting) and lock in place. Then just steer... the powerful 2 3/4 h.p. engine does the job. Ruggedly built, but so light to handle and store, a child can do it. Come in and "test run" the exciting Terro-Tiller today.

power unit and any 1 tool..... **\$129.50**
available with 2 3/4 H.P. engine with
recoil starter..... **\$139.50**
extra attachments, each..... **\$49.50**
all prices plus freight

GEORGE GARDEN TOOLS
Sullivan, Illinois



nichols
NEVER-STAIN

HANDI-PAC ALUMINUM NAILS

Thousands of uses in and around the house . . . in your workshop . . . on all your projects. **RUSTPROOF**—no unsightly streaks or stains. Hi-Temper solid aluminum alloy—easy to drive. Last indefinitely. Wide choice of sizes and types (including file grip and screw thread) . . . on your dealer's counter.

NICHOLS

WIRE & ALUMINUM COMPANY, DAVENPORT, IOWA



IMPERIAL RAPID BRUSH CLEANER

For HARD-CAKED brushes

Acts Instantly—no long soaking. At paint and hardware stores.

Wilson-Imperial Co., 121 Chestnut St., Newark 6, N. J.

D. C. ARC WELDER

AT A.C. TRANSFORMER WELDER PRICE



\$350.00 VALUE

ONLY

\$85.00 f.o.b.

200 Amps. Belt Driven

Model #LG-200 Can't be Matched!

Pays for itself immediately!

For field and shop use Ideal for machinery break-downs in field. Operates on any engine of 10 HP or more (old auto engine is excellent). Welds anything from tractor frames to sheet metal. Make your own special equipment for Farm, Shop or Factory. Does 1,000 jobs! **WELDS, CUTS, BRAZES** steel, cast iron, galvanized, bronze, aluminum, tool steels and stainless steels. Straight or reverse polarity. Welds 1/32" to 1/2" plate, cuts 1/8" plate. Uses 1/16 to 3/16" rods. **COMPARE FEATURES:** Brand New! Compact, rubber-type series winding for EVEN ARC. Rheostat for pin-point heat control. Large brushes for extra long life. Oversize ball bearings. Air cooled by fan striking and welding easier. Output is 30 to 200 amps. **ACCESSORIES AT A BUI!** Two 15-ft. cables. Ground Clamp. 300 amp. electrode holder. Ass't. electrodes. Helmet. Simplified instructions. **COMPLETE OUTFIT** (shpg. w/ 85 lbs.), only **\$98.50 f.o.b.**

FULLY GUARANTEED! you can't go wrong. Send for our LIMITED OFFER 10-DAY FREE TRIAL ORDER FROM AD Use it for 10 days. Be 100% satisfied or money back!

FREE... CATALOG of Motors, Electrical BUYS! ROBERTS ELECTRIC CO., Dept. PS-363, 849 W. Grand, Chicago 22, Ill.

WANT TO BE A LOCAL BRIKCRETE MANUFACTURER?

High income can be earned operating a Brikrete plant, because Brikrete—world's most modern masonry—gives more value for less cost to building owners without sacrifice of profits. Huge savings by local production makes possible low prices and high income potentials. Truly an outstanding manufacturing opportunity.



Choice Territories Open

Broad markets are waiting because Brikrete is popular for every type of residential, commercial and industrial construction. Ultra modern in design, size, proportion. Cost less than lumber. Wide color range. Combines all the features that make for large consumer acceptance. More local plants are needed. Exclusive privileges in franchise-protected territories. Mark-up averages 100% on basic cost. Brikrete machine available on lease. Write at once for Brikrete Book No. 2 and tentative reservation of territory.

Brikrete Associates, Inc., 422 W. 25th, Holland, Mich.

CANADA: Dunn Masonry Machinery Ltd.
802 Dundas Highway, Cooksville, Ontario

on any object **ELECTROPLATE**

ANY OBJECT IN HOME, SHOP, GARAGE. NOW with our NEW ELECTROCHEMICAL outfit. You can easily do your own plating. Not a patent. But a hard durable metal plate, equal to commercial plating. Use your own plating kit with instructions on plating metal and non-metal objects as Tools, Auto Parts, Silverware, Jewelry, Baby Shoes and 1001 other articles with Chrome, Nickel, Copper, Gold, etc. **SEND NO MONEY.** Everything sent C.O.D. for the low price of ONLY \$5.95 or send \$5.95 now and receive it postpaid. Money back in 7 days if not satisfied. M. Z. SALKS CO., Dept. H-5, 118 West 42nd St., New York 36, N.Y.

\$1300 BUILDS INCOME DUPLEX



Build your own 24'x36' concrete block duplex, complete for \$1300. 51/2b floor, steel windows, wall furnaces, rock wool insulated, no block cutting necessary. Each side contains 11'x17' living room and kitchenette, 14'x11' bedroom, 6'x9' bath, and four closets. Genuine blueprint, scale 1/4"=1', step by step instructions, and material cost list \$1.00 ppd. Money back guarantee. \$2850 Deluxe Duplex, brick veneer construction, gable roof. Two sheets blueprints and Mat. List \$3.00. \$1350 Block Garage Apartment, 12'x24' Room, Kt., bath and two bedrooms. Double garage below. Plan \$1.00. Member Ark. Home Bldrs. Assoc. **BAILEY BUILDERS**, Pyramid Bldg., Little Rock, Ark.

MAKE EXTRA MONEY

In many communities there's an opportunity for active, mechanically-inclined men to act as full time or spare time dealers, selling and servicing **ROTO-HOE** and attachments. It's pleasant, outdoor work—interesting and easy. **ROTO-HOE** is nationally advertised, has an excellent quality reputation as the pioneer front-tiller machine. We help you right from the start. Write today for full information. It may be the opportunity you have long wanted.

ROTO-HOE & SPRAYER CO.

BOX 18

NEWBURY, OHIO

SAVE UP TO \$20! 8" TILT ARBOR SAW

SOLD ONLY DIRECT FROM
FACTORY TO YOU!



ONLY
\$2995
Less
Guard

**FAMOUS AMERICAN
IRONCLAD GUARANTEE** — Try
any Plana Centric power tool
for 10 days. If you are dissatis-
fied, return for full and com-
plete refund — no questions
asked. Guarantee offered on
more than 3 1/2 million power
tools, and never violated.

Save big money. Buy this
fine 8 inch Tilt Arbor
Power Saw direct from
manufacturer. All cast iron
and steel construction.
Will last a lifetime; ship-
ping weight 30 lbs. Cross-
cuts, rips, bevels, mitres,
dadaes, cuts compound
angles. Massive cast mitre
gauge. Heavy steel base
fastens to any workbench.
Uses any standard 1/4
inch H.P. motor, INCLUDED
at no extra charge: 8"
Simonds Combination
Blade that sells for \$4.95.
Buy direct and save
almost \$20. Send check,
M.O., or sent C.O.D.

LOOK AT ALL THESE SPECIAL FEATURES

- Heavy, long lasting cast iron and steel construction • Precision ground cast iron table with mitre gauge slots on both sides of blade for operating convenience • Famous patented tilt arbor construction. Blade tilts 0° to 50°; table is always level • Automatic depth of cut control from 0" to 2 3/4"; Blade locks in any setting • Single hand wheel control. Tilts blade and locks at chosen angle • Saw insert quickly removable for dadding • Matar rides on patented ball bearing roller drive • Self-aligning patented cam action rip fence is always straight. Locks rigidly against table surface.

FREE CATALOG—Write for big bargains in home power tools.

All power tools sent express collect

AMERICAN MACHINE & TOOL CO.
ROYERSFORD 1, PA.

FISHERMEN
Make your own
SINKERS
JIGS SQUIDS
CASTING
and **SPINNING**
LURES

It's fun, it's easy with Sweet's

ALUMINUM MOLDS

Molds for fresh and salt water
fishermen. Handled and hinged
for easy, fast operation. Over
100 types, 500 AS LOW AS
sizes. Write for
FREE catalogue
TODAY.

295
per mold
SWEET'S MOLDS
TONAWANDA 31, N. Y.



Only **HOLD-E-ZEE**
The Original AUTOMATIC-GRIP
SCREWDRIVERS

PROVIDE THESE FEATURES:

- **LOK-BLOK** that makes blade twist and impact proof.
- **GRIPPER** that snaps back—recedes deep into handle, giving full blade use.
- **HAND GROUND BITS**—chrome vanadium, chrome plated blades.

**YET COST NO MORE THAN
ORDINARY SCREWDRIVERS**

USPSON BROS., INC., ROCHESTER 14 N. Y.

Pat'd.

At Leading Dealers
Everywhere!

Building?
Repairing?
Indoors?
Outdoors?

Glue it Best

WITH

ELMER'S

Make this bookcase
"Hide-a-Desk" with

**ELMER'S
GLUE-ALL**

A handsome piece in any
room! Build it strong
with ELMER'S modern
plastic glue. Handy
squeeze bottle speeds
job. Quick-set-
ting. Won't stain.
Ideal for wood,
paper cloth.



EASI-BUILD® Pattern #18. Just
trace, saw, assemble. Send 35¢
in cash or money order to Elmer's
Pattern Dept., P. O. Box 26,
Pleasantville, N.Y. *T.M. 26.
Easi-Build Pattern Co., Inc.



Build or repair boats, outdoor furniture with

ELMER'S®
Waterproof Glue

It's the glue that boat-
ing experts use. Resist-
ant to acids, alkalis, fun-
gus, rot. Super
bond is stronger
than wood
itself.



Bond plastic laminates to plywood with

**ELMER'S® CONTACT
CEMENT**

Does professional job
quickly, without clamps,
nails, presses. Highly
resistant to
heat, water.
Outperforms
other contact
cements in
stress tests.



At hardware, lumber, paint, marine
supply dealers. The Borden Company, Chemical Division

IF IT'S **Borden's** IT'S GOT TO BE GOOD

FEBRUARY 1956 297

**For TOP
Performance,**



**make RED SEAL POWER
the Heart of Your Machine**

Building a scooter or midget racer? Need a new engine on your lawnmower? Best power for ANY job within their range is one of these newest Red Seals. Greater piston displacement, for power in excess of rating—plus more "lug" at low speeds, eliminating stalls. Exclusive Context ignition system speeds and simplifies adjustment, doubles life of points and plug, and low oil level ignition cutoff ends hazards of running dry. 14 rugged models, horizontal and vertical shaft.



Write TODAY for name of Red Seal dealer nearest you.



AU Series Horizontal Shaft



AD Series Vertical Shaft

Continental Motors Corporation

INDUSTRIAL AIR-COOLED ENGINE DIVISION
12800 KERCHEVAL AVE., DETROIT 15, MICH.

MAIL ORDER SPECIAL



GASOLINE

\$9⁵⁰

CAMP STOVE

ORIGINAL COST \$80

BRAND NEW U. S. ARMY FIELD RANGE Burner Unit, approx. 50,000 B.T.U., complete w/2 extra generators, unit as pictured. Cook on it, use as cabin heater. Shipping wgt. approx. 55 lbs. Supt. 21 1/2" H., 18" W., 8 1/2" D.
SPECIAL NEW ARMY MACHETTES.....\$1.95
FOLDING FOX-HOLE SHOVELS.....\$1.00
FOX-HOLE PICK-MATTOCK.....\$1.00
All prices FOB Memphis—order now. Supply limited

J. P. DAVIDSON CO.

104 N. Front

Memphis, Tenn.

PRESTO MASTER GLAZE

--FOR ALL CARS--



Car Owners! Meet Master Glaze—the sensationally different luster for new and used cars! Not a wax—not an oil polish—not a paint!—nothing that "smears" over the surface.

AGENTS

An unusual opportunity! Quick, flashy demonstrator. Big profits. Good territory. Write today!

MASTER GLAZE is a unique discovery—quick and easy to apply! Gives a hard, glass-like surface. Even gasoline cannot dull it! Lasts six months to a year! Amazing luster—beautiful, sparkling clean and brilliant! Doesn't finger-mark—doesn't smear! A match box full glazes an entire car. Seals the pores, protects! NOTHING LIKE IT!

FREE SAMPLE

Send name, address on postcard for details and free sample MASTER GLAZE, 7720-841 Harwood Ave., Milwaukee 19, Wis.



Treasure and Mineral LOCATORS GEIGER COUNTERS

Superior performance, lowest price, monthly payment plan. FREE LITERATURE.

FISHER RESEARCH LABORATORY, Inc.
PALO ALTO, CALIF.

FULL SIZE MODEL KITS!



\$5.95

Complete, improved detail, easy to finish. The original kit. Wood with process for gun metal finish. ORDER THESE MODELS DIRECT. Ideal for gun or science room.

NEW illustrated catalog of 9 models. For Catalog, Send 10¢ to:

O'BRIEN GUNCRAFT (C) P.O. BOX 657 MADISON, WIS.



PLOW, CULTIVATE, MOW, RAKE
BULLDOZE, SNOWPLOW
SAW WOOD

TRACTORS

Just steer it with power turn. Several walking & riding models up to 14 H.P. Low price! Write for FREE literature.

SHAW Manufacturing Co.

5702 Front St., Salesburg, Kansas
668-PS N. 4th St., Columbus, Ohio



FREE BOAT KIT CATALOG

Write:

8' to 14' Models from \$39.95

incl. freight

- Assemble your own boat
- No experience necessary
- Save 1/2 to 3/4 "factory built" prices



12 ft. Runabout Pictured

Marine Hardware, Trailers, Fiberglass



DEPT. A 4652 NICOLLET AVE.
MINNEAPOLIS 9, MINN.

Not an "ACHE in an acre"
gardening with... **Ariens**
Yardster
ROTARY TILLER



Your handiest tool to save time and work! Interchangeable attachments for mowing lawns, spraying trees, plants... clearing snow from walks, drives.

Ariens Yardster rotary tiller prepares garden without spading... cultivates all season without hoeing! Priced at only \$179.00. Self-propelled with 2-speed wheel drive — merely guide it! With mower, sprayer and snow-thru attachments it's unequalled for construction, looks, performance and price. Ask your dealer for free demonstration.

LOOK! Only \$139.50 for the amazing



Ariens
Inc.

rotary tiller with "paring knife" tines. See it... and you'll buy it! Visit your dealer or write:

Ariens COMPANY

159 Calumet Street

Brillion, Wisconsin



STOP LEAKS

Tight seals for automotive gaskets—fix leaks (liquid or gas) around the house.

FORM-A-GASKET No. 1, No. 2 or No. 3

At your garage or service station

More than 50 Chemical Products for Better Automotive Maintenance



ELECTRIC WELDER

AC or DC
110 Volt

The "Little Marvel" all-metal welder. 5-year written guarantee. Welds 1/4" metal or money back. Repairs tanks, tools, fenders, machine parts, etc. Complete with everything—rods, unit, eye shield, directions. \$6.95 plus 50c postage. Flame torch accessory for soldering, cutting, brazing \$3.95 complete with carbons, brass rods, flux. \$2.00 deposit on C.O.D. 75 Ampere 1/4 inch Transformer Welder \$21.95 F.O.B.

ESSAY MFG. CO., Dept. 47, Quincy 69, Mass.

\$6.95
Complete

NOW—THE QUICK-WAY TO SHARPEN ALL CIRCULAR SAWS

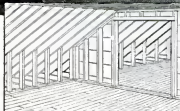
NEW

Model PG-12 Complete No extras to buy. **\$16.50** Postage Paid



Model PG-12 sharpens joints, gums, and retools all cross cut, rip, combination, miter, and planer blades up to 12" in diameter. Two precision index plates give versatile, accurate sharpening. Guarantees precise spacing of teeth. New safety rest prevents tilting and gouging of blade. Save time and money. Special \$3.00 grinding wheel also included for use on your own power table. Fits regular or radial swing tables. Order today. Send check, cash, or money order. We pay postage. **QUICK-WAY SAW CO.**
100 Hornby Drive, Painted Post, N.Y.

Add this BOY'S ROOM in your waste attic space!



Start this week end... with Gold Bond Building Products



It's easy to build your boy his own room right in your attic—with Gold Bond Add-A Room products. With framing in place, just staple up new, fireproof TWINSULATION... it keeps his room warm and cozy in winter, up to 15° cooler in summer. Next, nail up rugged Gold Bond Gypsum Wallboard for smooth, fireproof walls and ceilings. And, for a beautiful finish, roll on your favorite shade of Gold Bond Velvet paint. It dries in minutes and it's washable!

NATIONAL GYPSUM COMPANY
Buffalo 2, N. Y.

MAIL COUPON TODAY

NATIONAL GYPSUM COMPANY
Dept. PS 26, Buffalo 2, N. Y.

Please send me my Gold Bond Add-A Room Instruction Packet. Enclosed is 10¢ to cover mailing.

Name

Address

City Zone State



SLIGHTLY BLEMISHED CASES . . .

MESSAGE TO POPULAR SCIENCE READERS. For a long time we have been one of the country's largest importers of quality optical goods. You may have seen our research and school microscopes advertised in many of the other men's magazines over the past several years. We have always carried a complete line of binoculars as well. Our last inventory revealed quite a quantity of binoculars whose cases have a slight blemish, flaw, or discoloration which prevents them from being sold at regular retail prices. The cases are genuine pikskin (two pikskin carrying straps included as usual). We guarantee that all binoculars are NEW, PERFECT in every respect, optically, mechanically and in every detail. BINOCULARS are wide field, full size, calibrated for individual focus and interpupillary adjustment. They are made in Japan. Both objective and ocular lenses are fully coated. Prisms are top quality color corrected.

\$19.72

Ppd. complete. Plus 10% Fed. Tax. 7 Power large objective. The most popular American binocular (82 on hand). Reg. retail price—\$40. SPECIAL PRICE—\$19.72 ppd., plus 10% Fed. Tax.

SIX MODELS ON SPECIAL

6 x 30

The standard 6 power (63 on hand). Reg. retail price \$30.00. SPECIAL PRICE—\$13.99 ppd., Plus 10% Fed. Tax.

8 x 30

A favorite plains class, 8 power (32 on hand). Reg. retail price \$35.00. SPECIAL PRICE—\$16.84 ppd., Plus 10% Fed. Tax.

12 x 50

12 power. The most powerful in standard length (24 on hand). Reg. retail price—\$60.00. SPECIAL PRICE—\$23.48 ppd., Plus 10% Fed. Tax.

16 x 50

16 power. A wonderful range finder and varmint glass for the man with a steady hand (10 on hand). Reg. retail price—\$70.00. SPECIAL PRICE—\$26.65 ppd., Plus 10% Fed. Tax.

7 x 35

7 power Bausch & Lomb special wide field design (10 on hand). Reg. retail price—\$40.00. SPECIAL PRICE—\$23.40 ppd., Plus 10% Fed. Tax.

151 POWER SPACE SCOPE \$89.50 ppd.

Complete with hardwood case



THE AKRON

SO POWERFUL . . . YOU MUST SWEEP IT ACROSS THE MOON TO SEE ALL ITS MOUNTAINS, CRATERS AND DESERTS. Here is the greatest value in astronomical telescopes ever afforded. A precision instrument that will show you the moons of Jupiter, the rings of Saturn, individual mountains and craters on the moon with brilliance and pinpoint clarity. It is massive, stable and big, about seven feet high when fully extended. It has both universal micro and free-swiveling adjustments. May be locked at any exact position from horizon to directly overhead. Equipped with adjustable counter-balance. 6X searching scope with crosshairs, both straight through viewing and prism attachment with projection screen and mounting bracket (may be used for photography and/or drawing), low power tube extension with integral optics, lens and equipment tray. Achromatic (color corrected) ocular lenses included: 151X, 75X, 35X, 25X. Integral sun filter. Objective lens 60MM. Shipped carefully packed, padded, insured in hinged hardwood cabinet with clasp and valve type carrying handle.

If made in this country this instrument would have to be sold for about \$60.00. The Space Scope is a product of the very fine optical industry which has developed in Japan as a result of German assistance during WW II. We are the designers and direct importers, offering the Space Scope direct from factory to you. To order, send check, or money order, \$20 deposit for C.O.D. As usual, our 10-day money back guarantee applies. Calif. resid. add 3% state tax. To order: Send check or money order. For C.O.D. send \$5 for each pair. Binoculars shipped complete with cases and straps, well packed and insured. RETURN WITHIN 10 DAYS FOR FULL REFUND IF YOU DO NOT CONSIDER THESE THE MOST REMARKABLE BARGAINS YOU HAVE EVER SEEN. Calif. residents add 3% state tax.

4400 Sunset Blvd., Los Angeles 27, Calif.

CUT-TO-FIT HOMES CUT BUILDING COSTS

CHOICE OF 57 DESIGNS

ORDER NOW

SAVE UP TO 1/3



Build your own home and save the builders' profit—plus savings in lumber and labor with Sterling Ready-Cut-Homes. Anyone can assemble with simple, easy to follow plans furnished. Every house complete with all lumber, roofing, nails, glass, hardware, paint, doors and windows marked ready to erect. Freight paid. Complete building plans ready for filing at low cost. Sold separately if desired. Write today!

PRICED FROM \$2150 up
Five Easy Payment Plans

Send 25c for NEW COLOR CATALOG

INTERNATIONAL MILL AND TIMBER CO.
DEPT. PS 26 BAY CITY, MICHIGAN

NEW IDEAS FOR DECORATING

COFFEE
TABLES
PICTURE
FRAMES
LAMP
SHADES
WASTE
BASKETS
ETC., ETC.



Create them yourself
with New Flexible

Weldwood® Wood-Trim®

Add a distinctive, luxury look to scores of familiar household objects—with Weldwood Wood-Trim. It's real wood veneer in easy-to-use rolls! Applies in minutes, with any good wood glue like Weldwood Contact Cement or Presto-Set® Glue. No clamps, nails, hot iron, etc. So pliable...shapes to cover any shape or surface.

Edges plywood too!

Great for covering exposed edges and giving a "pro" finish to plywood tables, desks, cabinets, etc.

8 ft. rolls 1" wide, 79¢ each.
Oak, African Mahogany,
Walnut, Birch, Korina, Fir.

At hardware, paint and lumber dealers
or write for free leaflet. Dept. PS2-6WT

UNITED STATES PLYWOOD CORP., BOX 525, N. Y. 46

DO MORE PLANING JOBS WITH LOW COST BELSAW

Exclusive MONEY-MAKING features:

- Full 12 1/4 in. x 6 in. capacity
- Power feeds at 24 ft. a minute.
(Easily adjusted for lower feed rate)
- Machined cast iron bed; adjustable rolls, total bed length 42 in.
- Provides for Grinding Knives in the Cutterhead.
- Attachments for Jointing, Rabbeting, Tongue, Groove, Matching.



Belsaw Multi-Duty Planer for cabinet shops, builders, lumber yards, woodworking plants and spare time work shops... Now you can convert low cost rough and random size lumber into high priced cabinet finished stock... Easy to make flooring and popular patterns. Belsaw quickly returns cost with savings on raw material... profits on finished stock.

Send Today for FREE literature on Belsaw, the LOW COST, high speed production planer.

BELSAW MACHINERY CO

2066 Field Bldg. • Kansas City 11, Missouri

LOW DOWN
PAYMENT
EASY
TERMS

WELD IT YOURSELF! IN A JIFFY!

Weld, Cut, Braze, Solder
IRON, STEEL, BRONZE, BRASS,
ALUMINUM & OTHER METALS

Tool and Equipment breakdowns are always annoying and costly. Don't let them bother you. Get a Dynamic Arc Welder. You can do expert work on your very first job. Welders operate on your properly wired 110 V. AC line. Also make your own wrought iron furniture, railings, fences & knick-knacks. Repair fenders, & bodies etc. with the handiest "tool" in your workshop. A Dynamic will pay for its low cost of \$38.50 F.O.B. in both time and money.

DYNAMIC INDUSTRIAL type transformer Arc Welder 75 amp. output for Industrial or Workshop use.

**DYNAMIC
WELDER CO.**

Dept. D3-B, 1808 S. Federal St.
Chicago 16, Ill.

EASY PAY PLAN

Low down payment. Pay as you weld. Sold on money-back guarantee. Send for details. Complete outfit only

\$38.50

f.o.b. factory



Free Details and "How to Weld"



ROAD TO RICHES

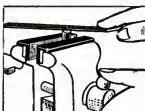
You can be the next uranium millionaire! Government guarantees huge bonus! PRI instruments from \$29.95. See your local dealer today! FREE CATALOG! Write PRI, 4223 PS W. Jefferson
Los Angeles 16, California



44 PAGES
OVER
100
MODELS

NEW PENN YAN BOAT CATALOG

FREE! Get yours today. Many models illustrated in color. Cartops®, Trailboats, other outboards, canoes, rowboats described fully. Catalog features amazing new no-soak, work-free, all-wood *Stripittes*. Penn Yan Boats, Inc., 35th St., Penn Yan, N. Y.



FITS ANY VISE

NEW "VISE JAW"

PROTECTS WORK IN VISE
Stop damaging work! Holds finished work securely. WITHOUT MARKING FINISHED SURFACES. Easily snaps on and off. New, specially compounded plastic material won't crack or break. Lasts indefinitely. Order by Vise Size: 2 1/2", 3", 4", 4 1/2", 5", 6". Send cash. \$1 ppd. check or M.O. BROWN MFG. CO. INC. Dept. P-2
110 W. Alameda, Burbank, Calif.

PAGE TILLERS

Now 1956 "Page-Boy"

Makes tough jobs easy!

3 Models—1 1/2-2-3 1/2 HP. Tiller, mower, snow blow attachments easily shifted. Safe and easy to operate. Rugged steel frame, adjustable rubber tired wheels. So handy around the home or farm!

FREE CATALOG—Complete tractor line with all attachments

PAGE

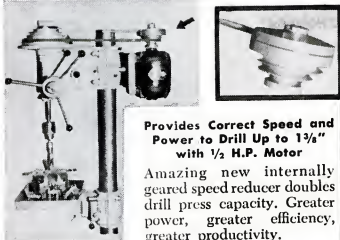
1916 South 81st Street
Milwaukee, Wisconsin

- ★ FULLY
GUARANTEED
- ★ LOW PRICED
- ★ EASY TERMS



Tills,
Cuts Grass,
Blows Snow!

New "PULL-GEAR" SPEED-REDUCING PULLEY



Provides Correct Speed and Power to Drill Up to 1 3/4" with 1/2 H.P. Motor

Amazing new internally geared speed reducer doubles drill press capacity. Greater power, greater efficiency, greater productivity.

Provides the correct speed and power for larger drilling, reaming, tapping and boring on light presses. Easily installed in five minutes. Adaptable to all type machines. Spindle speed range approx. 45 to 3000 RPM. Made in 3 motor shaft sizes: 3/4"-1 1/4"-1 3/4". Write for literature.

WRITE FOR LITERATURE

THE PULL-GEAR CO.

25429 Mound Road
Center Line, Michigan

Guaranteed original equipment Replacement Auto Parts . . . at Western Auto

BUILD YOUR OWN MIDGET ROADSTER \$25 BUILDS BODY & FRAME



BUILD A PONY ROADSTER or Pick-Up in few spare hours. Uses 2 hp engine, 450 lb. loads, 70 m.p.g., plenty of speed. Designed for VERY LOW-COST assembly from PARTS BOUGHT IN YOUR NEIGHBORHOOD. Use home tools. Great for kids, sturdy utility car. COMPLETE step-by-step plans. 17 large-size photos. 30 "show-how" photos. Body templates, complete material and parts list. ONLY \$1.95 POST-PAID. Satisfied or money back.

PONY PLANS, DEPT. 32, 7441 TEXHOMA AVE, NORTHRIDGE, CALIF.

WARN HUBS for 4-WHEEL DRIVES

Make 2 Vehicles Out of 1!

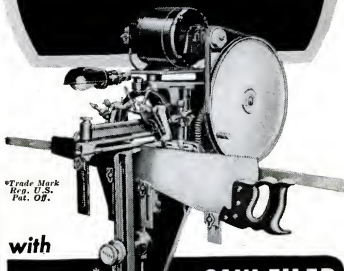
Over 75,000 satisfied users! Warn Hubs disengage front power train for 2-wheel drive use—stop drag, gear whine, front end shimmy; save gas, gears, tires. Use your 4-wheel drive for any purpose, any time, with Warn Automatic or Locking Hubs. Models for all makes of 4 W. Ds. to 1 1/2 tons at dealers, or write:



AUTOMATIC FREE-WHEELING 2-WHEEL DRIVE OR HIGH SPEED 4-WHEEL DRIVE AS YOU SHIFT!

WARN MFG. CO., Riverton Box 6064B2, Seattle 88, Wn.

Made \$900 IN SPARE TIME



Trade Mark Reg. U.S. Pat. Off.

with

FOLEY* automatic SAW FILER

"I did very well last year with my Foley equipment, sharpening about 950 saws in my spare time. About \$900 for me."

Leo H. Mix

"I have done 4 or 5 thousand saws in my spare time in the 4 1/2 years since I got the outfit, and they are all coming back with repeat orders."

Len Crego

Make up to \$3 or \$5 an hour in Spare Time

With the high prices of food, clothing and everything else, just think what you could do with extra money every week! With a Foley Automatic Saw Filer you can file hand, band and circular saws better than the most expert hand filer. "The first saw I sharpened with my Foley Filer came out 100%," writes Clarence E. Parsons. Cash business, no canvassing. No eyestrain—no experience needed.

FREE BOOK Shows How to Start

"MONEY MAKING FACTS" tells just what to do to start your own spare time business in your basement or garage. Just think—with a small investment, no overhead, no stock of goods to carry, you can get right into a cash business. Send coupon today—no salesman will call.



Send for FREE BOOK

FOLEY MFG. CO., 219-G Foley Bldg., Minneapolis 18, Minn.

Send FREE BOOK — "Money Making Facts"

Name _____
Address _____

NEW for 1956 . . . 16 Models



GET 1956 CATALOG
NOW . . . FREE!

STARCRAFT BOAT COMPANY
Dept. N-2 Goshen, Indiana

STARLITE ALUMINUM BOATS BY

STARCRAFT

FISHING or FUN there's a Starcraft for everyone!

People 60 to 80 Tear Out This Ad

. . . and mail it today to find out how you can still apply for a \$1,000 life insurance policy to help take care of final expenses without burdening your family.

You handle the entire transaction by mail with OLD AMERICAN of KANSAS CITY. No obligation. No one will call on you!

Write today, simply giving your name, address and age. Mail to Old American Ins. Co., 1 West 9th, Dept. L280M, Kansas City, Mo.

AMAZING NEW TINY RADIO


Really Works—Small as a Pack of Cigarettes!



FITS IN ANY POCKET OR PURSE—GETS LOCAL RADIO STATIONS WITH CLEAR BELL-LIKE TUNE—NO STATIC OR INTERFERENCE! NEEDS NO TUBES, BATTERIES OR COMPLICATED WIRING! NO AC PLUG INS! Nothing to wear out. Thousands of users—many report years of service. Uses a new crystal diode and H-Q coil. SELF-CONTAINED SPEAKER PHONE. Just the tiny radio to take with you ANYWHERE YOU GO—ON TRIPS, VISITING, ETC.—for real fun and enjoyment—

SEND ONLY \$1.00 (bill, ck., mo.) and pay postman \$1.00 C.O.D. postage or send \$3.00 for p.p. delivery. COMPLETE READY TO LISTEN—with guarantee.

MIDWAY CO., Dept. PPS-2, Kearney, Nebr.

help your 
HEART FUND
help your HEART



Drive
and live on
the safe side
of the road!

**BE CAREFUL . . . the life
you save may be your own!**



NEW FOR THE HOBBYIST AND CRAFTSMAN! DREMEL model B Moto-Sander gives you

more

versatility
beauty
capacity

PLUS
STRAIGHT-LINE ACTION

the only sanding action
approved by finishing experts!

Set yourself for a new high in excitement when you see the new DREMEL Model B! Here's versatile performance that will make the whole family itch to put it to work! It's a combination sander-polisher-mossager that delivers 14,400 strokes per minute—straight-line strokes that follow the wood-grain for flawless finishes free of orbital scratches and swirls. Satin-smooth performance is yours in every DREMEL sander. Choose the size that fits your need!

SEE YOUR DEALER. If he cannot supply, order direct on 5-day trial, money-back guarantee. Remit in full for postpaid shipment. Or send \$2 now, pay postman balance plus C. O. D. fee.

DREMEL MFG. CO. Dept. 126-B Racine, Wisconsin

WRITE FOR FREE POWER TOOL CATALOG!



with 13 sq. in.
sanding pad

\$14.85

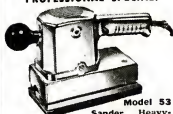
CRAFTSMAN'S FAVORITE!



Model
2000 Sander

Big capacity sander-polisher that's a must for the small shop, and home workshop. Straight-line action for flawless finishes. 21 sq. in. sanding pad. In steel case, with 6 abrasives \$24.50

PROFESSIONAL SPECIAL!



Model 53
Sander. Heavy-duty sander designed

for the professional and craftsman. Powered by a real ROTARY MOTOR, it really takes a bite. Ideal for rough or finish. Exclusive easy-on, easy-off pad. With 6 abrasives, extra pad \$34.85

CARBURETOR SAVES GAS VACUMATING OVERRICH MIXTURES



Car owners who are getting poor gas mileage, and wasting money due to overrich mixtures, will be pleased to learn how to save gas. Easily installed Vacu-matic invention is Automatic and operates on the supercharge principle. For cars, trucks, tractors.

SALESMEN WANTED! Big Profits!

FOR FREE PARTICULARS, HOW YOU CAN GET ONE ON YOUR OWN CAR FOR INTRODUCING, just send your name and address on a post card to—

Vacu-Matic Carburetor, Dept. 843, Wauwatosa, Wis.

RIDE WHILE YOU MOW



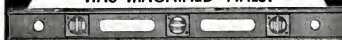
Take it easy with the **SPRINGFIELD RIDING LAWN TRACTOR**. Cut on slopes.

Forward and reverse. Mows weeds or grass. Snow blade, roller, cart, leaf pulverizer, aerator attachments available. **FREE CATALOG.**

Quick Manufacturing Inc.

3256 E. Main St., Springfield, Ohio

SUPER-LIGHT LEVEL HAS MAGNIFIED VIALS!



EMPIRE
ACRA-LITE
No. 1521

A craftsman's dream! Acra-Lite Magnesium Level is ONE THIRD Lighter — for easier, faster handling. Easier to read, too. Super-accurate vials have "Full-View" magnifying cover plates. Get YOURS today — at your dealer, or order direct.

New Empire Acra-Lite Magnesium Level No. 1521, 24" Only \$6.70 \$7.60 \$13.50

EMPIRE LEVEL MFG. CO.

10930 W. POTTER RD., DEPT. PS, MILWAUKEE 13, WIS.

Koenig ALL-STEEL CABS for JEEPS

FULL AND HALF CABS



★ PROTECTION — from weather and burglary.

★ SAFETY — All-steel, welded construction. No rivets. Safety glass used throughout.

Available in full cabs (cover entire body), and half cabs (cover front passenger compartment).

★ COMFORT — Full air-spaced head lining and door lining. No vibration.

★ CONVENIENCE — Roll-down windows, full opening.

KING POWER WINCHES

For all Willys Jeeps, 4WD trucks and station wagons . . . also for Ford, Chevrolet, International and Dodge trucks.

Dependable pull power designed to fit specific pull and hoist needs. King power winches have pull capacities of 8,000 to 19,000 lbs.



Koenig Cabs and King Winches for Willys vehicles are available through Willys Motors, Inc., and Willys-Overland Export Corp. distributors or dealers. Write for descriptive literature.

Koenig

IRON WORKS, Inc.

Dept. S, 2214 Washington Ave.

HOUSTON 10, TEXAS

"ARCO JIG-SAW"

WITH EXCLUSIVE NEW
CIRCLE-
CUTTER
& RIP
GAGE!

Another "ARCO" FIRST! "Arco Jig-Saw" (guaranteed to fit any $\frac{1}{4}$ " drill) with Adjustable Circle-Cutter & Rip Gage saves hours of work—insures professional-looking results everytime—whether cutting circles, curved patterns, or straight cuttings. Cuts perfect circles any size up to 20" diameter; rips accurate widths any size up to 10" wide. Has same capacity and cutting speed as \$55 jig saws. Does work of Jig, Keyhole, Coping, Rip, Crosscut, Band & Hack-saw! Built-in "Air-Jet" blows away sawdust. Cuts intricate patterns—however large—in plywood, plastics, metals—even runs 2x4's! Starts inside holes. Includes blade. Converts to Table Model with

No. 401 "ARCO STAND" Sturdy Casting & Clamp.....\$2.75
8 Extra Assorted Blades for wood, plastics, metals.....\$1.96
SOLD AT BETTER HOME STORES EVERYWHERE. If not available, order direct and try this amazing tool on our UNCONDITIONAL 30-DAY MONEY BACK GUARANTEE. Send check or M.O. (incl. C.O.D.'s—plus post.

ARROW METAL PRODUCTS CO.
Dept. PS-2, 140 WEST BROADWAY, NEW YORK 13, N.Y.

Hinges S-Q-U-E-A-K?

America's most popular remedy is 3-IN-ONE Oil. Penetrates and frees stiff hinges and locks. Gives lasting lubrication and rust protection. Leaves no gummy deposit.

"3-IN-ONE" OIL

FOUND IN BRITAIN!

**ENFIELD
COMMANDO REVOLVER**

Designed and ordered by the British Commando force (WW II), a rare and unusual weapon. This gun would sell now for \$60. We have a small lot which we believe are the last anywhere in the world. Very Good Condition, bores perfect. Modern breaktop design with strongest stirrup lock ever made, allowing it to be reloaded with one hand at a dead run. It fires .38 S&W ammunition. Bores British Crown and Broad Arrow ordinance marks. Special non-slip grips, two-side thumb rests. A fine shooting piece. A good investment for home defense, camping trips rugged all around use. To order: Send check, cash or money order. Shipped P.O.B. Pasadena. For C.O.D. sent 1/3 deposit. Dealer inquiries invited. California residents order only thru your local dealer.

GOLDEN STATE ARMS CORP. 110 Armory Bldg.
1165 E. Colorado St., Pasadena 1, Calif.

KING SIZE ALUMINUM BOATS



by **WAGEMAKER**

Big and roomy, tough and sturdy, that's the Wagemaker All-Aluminum line. Models from 12' to 18'. Styrofoam flotation, self-bailing valves. Also the Improved "Seafarer 15", Ply-Lap, molded plywood, strip boats, and fiberglass models. See these boats at all major boat shows. Free catalog on request.

WAGEMAKER COMPANY

Dept. 49 Grand Rapids, Michigan

SENSATIONAL NEW HIGH SPEED DRILLMASTER

NOW turns the ordinary shop drill into HIGH SPEED DRILL PRESS at a big saving. When DRILLMASTER is used on a 3,000 rpm drill press its top speed will be 20,000 rpm. Does the work of expensive high speed drill presses on brass, aluminum, plastics and cast iron where high speed drilling is necessary. Available for work of any size runs. Fits any 1/2" chuck, holding drills from 5/32 to #80. Shafts are heat treated and ground. Ball bearings and oil impregnated bearings and gear train are housed in cast aluminum. Precision made through-out. \$62.50. F.O.B. out. MAIL ORDER TODAY only.....\$62.50. CHEQ.
ON C.O.D. ORDERS WE REQUIRE A 10% DEPOSIT. Wt. 22
DIRZIUS MACHINE SHOP "W", 1423-25 St., 52nd Ave., Cicero 30, Ill.

SAVES PLUMBING BILLS ROD-IT-YOURSELF



Are your Sewer and Drains clogged? We sell New Rodding Tools for cleaning out clogged up SINKS, TOILETS, FLOOR DRAINS, up to 100 Ft. But now I ask you what is it worth when its cost is less than the bill your plumber sends? Tear this ad out—tear your forget and write now for FREE BOOKLET. No Agent will call. Mitter Sewer Rod, 4638 S. Central, Chicago 30, Ill. Obey that urge & write.

TRAVEL DREAMS COME TRUE!



Cast loose to follow the sun...explore the byways, relax by a rippling stream...enjoy the sea, the woods, the mountains, with all the comforts of home. Write for free booklet!

AIRSTREAM TRAILERS INC.
110 CHURCH ST., JACKSON CENTER, OHIO
1755 N. MAIN ST., LOS ANGELES 31, CALIF.

C MAGNETS

ASSORTED MAGNETS with big list of handy uses.....5 for \$1
POWERFUL POCKET MAGNET ideal for testing metals.....\$1
RETRIEVING MAGNET pulls tools, etc., from tank or lake.....\$4
HOT PAD MAGNETS to insert in your own hot pads.....8 for \$1
BULLETIN BOARD MAGNETS to "pin-up" memoranda etc.....8 for \$1
EXPLORE, LEARN—Electricity, Magnetism, Electro-Magnets. Complete Kit & instructions with 22 experiments and models.....\$3.98
Free Catalog, 100% Satisfaction Guaranteed.....POSTPAID
PARK MAGNETS, 662, 1557 Greenbay Rd., Highland Park, Ill.

POWERFUL! LOW COST! Light • Rugged • Maneuverable

America's best tractor value. More useable power -- pulling, pushing, driving, 770 lbs. Pulls 12" plow, Gear Drive 8.4 Hp. B&S engine, Roller Bearings, B&W 4 speed Trans, Clutch, Diff. Full line implements, 100% satisfaction guaranteed.

Write for FREE CATALOG
COUNTRY SQUIRE TRACTOR CO.
P. O. Box 107-A-2
Muskego Wisconsin

**COUNTRY
SQUIRE
TRACTOR**



STOP SAGGING REARS!



with
LOW-COST

AIR LIFT PNEUMATIC SPRING BOOSTERS

Car got that "middle age spread" look? Even new cars need help for overloads of luggage, equipment or extra passengers. AIR LIFTS fit between leaf springs and frame — inflate with air to support overloads up to 1000 lbs! Perfect for vacation trips, and so easy to install. See your dealer or write for his name.

Most
Models
\$20



FREE! . . . tip-packed literature on Air Lift remedies for sagging rears. Write Dept. 132.



**AIR LIFT COMPANY,
LANSING, MICHIGAN**

I CAN SAVE YOU 94%!



Send for NEW 1955 Illustrated BOOK of BIG WAR SURPLUS BARGAINS for mechanics, farmers, gadgeteers & outdoorsmen. Unbelievably LOW PRICES.



P-1 GENERATORS

200-250 Amp, 24 Volt DC, 4500 RPM. Makes dandy Arc Welder, Cost Gov't \$386. Used like NEW—SPECIAL at \$12.85. Gov't. Overhauled \$19.80. NEW \$24.75. FOB York. **GUARANTEED!** Diagram & Instructions included FREE! Cat. with 1,000's of BIG BARGAINS FREE! K. ORT, Dept. 2P5, York, Pa.

**WAR SURPLUS
BARGAIN FREE!**

JEEP OWNERS

STA. WAGONS • JEEPSTERS • PICK-UPS!

Take full advantage of 4-wheel drive by installing a Ford V-8 engine —MORE POWER—means less shifting, better traction, at lower speeds, greater safety, plenty of power in high. All this is now possible by using our F-J adapter plate. Conversion Kit \$43.25 incl. F.E.D. Tax. Write for free details or send check or M.O. for prepaid delivery. Order now for early shipment. Please indicate year of engine you will use and whether 2 or 4 wheel drive.

HOOSIER MACHINE PRODUCTS CO.

314 S.E. 6th St.

Pendleton, Oregon



GENUINE ALNICO MAGNETS

UP TO 350 LB. PULL

AMAZING, PERMANENT, NON-ELECTRIC, HIGHLY PRACTICAL. Have pull as high as 65 times their own weight.

Mystifying, Perpetual Power Without Electricity!

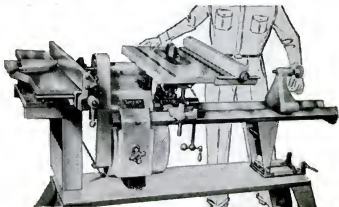
Test metals. Conduct interesting experiments. Hundreds of uses—Retrieve valuable steel items such as guns, tackle from deep water; tools from tanks & drains. Our customers include big industries and home hobbyists. Every magnet **GUARANTEED** to please.

No. 8-600 Has pull of 350 lbs. on flat steel block.	\$34.50
No. 8-725 Has pull of 225 lbs. on flat steel block.	\$16.50
No. 8-725 Has pull of 125 lbs. on flat steel block.	\$9.50
No. 8-755 Has pull of 75 lbs. on flat steel block.	\$6.50
No. 8-300 Has pull of 60 lbs. on flat steel block.	\$4.50
No. 8-101 U-shaped Magnet. Has pull of 8 1/2 lbs. 2 for . . .	\$1.50
No. 8-47 Hot Pad Magnets 10 for \$1.00	\$4.87
No. 8-65 Hobbyist assortment of 8 small magnets.	\$1.50

Send M.O. or check. We pay postage. Sorry no C.O.D.'s.

MIAMI MAGNET COMPANY, 3240 N. W. 27th Ave., Miami 42, Fla.

LOOK! All New - All Precision - All Deluxe SUPERSHOP MODEL X



**WE PAY ALL
FREIGHT FOR
YOUR FREE
HOME TRIAL**

8" SAW

**ONLY
\$139.50
EASY
PAY
PLAN**

Never before have you seen so much deluxe, precision-built power tool workshop at any price! Designed for the man who wants the best. Massive cast and precision-machined headstock, self-centering inverted "V" bedways (like precision metal lathes), exclusive non-friction speed changer, extra-large cast and precision-ground saw table. 100% ball bearing, lifetime-lubricated. You save by ordering direct from factory. You are invited to test Supershop Model X in your home FREE. Mail coupon or postcard for FREE brochures, photos, details, specifications, accessory list — and amazing freight prepaid FREE HOME TRIAL PLAN. All free.

**MAIL COUPON OR
POSTCARD TODAY**

Vert. Drill Press



Hor. Drill Press



8" Sander



30" Lathe



5" Grinder

POWER TOOLS, INC. 280 Yates Ave.
Beloit, Wisconsin

NAME _____
ADDRESS _____
CITY _____ STATE _____

The new streamlined model TC-55

TUBE TESTER



QUICKLY AND EFFICIENTLY TESTS RADIO AND TV TUBES INCLUDING: SEVEN PIN MINIATURES; EIGHT PIN SUBMINARS, OCTALS AND LOCTALS; NINE PIN NOVALS

YOU CAN'T INSERT A TUBE IN THE WRONG SOCKET.

It is impossible to insert the tube in the wrong socket when using the new Model TC-55. Separate sockets are used, one for each type of tube base. If the tube fits in the socket it can be tested.

"FREE-POINT" ELEMENT SWITCHING SYSTEM.

The Model TC-55 incorporates a newly designed element selector switch system which reduces the possibility of obsolescence to an

absolute minimum. Any pin may be used as a filament pin and the voltage applied between that pin and any other pin, or even the "top-cap."

CHECKS FOR SHORTS AND LEAKAGES BETWEEN ALL ELEMENTS. The Model TC-55 provides a super sensitive method of checking for shorts and leakages up to 5 Megohms between any and all of the terminals.

ELEMENTAL SWITCHES ARE NUMBERED IN STRICT ACCORDANCE WITH R.M.A. SPECIFICATION.

One of the most important improvements, we believe, is the fact that the 4 position fast-action snap switches are all numbered in exact accordance with the standard R.M.A. numbering system.

Thus, if the element terminating in pin No. 7 of a tube is under test, button No. 7 is used for that test.

The Model TC-55 comes complete with operating instructions and charts. Use it on the bench—see it far field coils. A streamlined carrying case, included at no extra charge, accommodates the tester and book of instructions.

26⁹⁵

**SHIPPED ON APPROVAL
NO MONEY WITH ORDER—NO C.O.D.**

Try it for 10 days before you buy. If completely satisfied then send \$6.00 and pay balance at rate of \$5.00 per month for 4 months — 2% interest or Finance Charges Added. If not completely satisfied, return to us, no explanation necessary.

MOSS ELECTRONIC DIST. CO., INC.
Dept. D-295, 3849 Tenth Ave., New York 34, N. Y.
Please rush 1 Model TC-55. I agree to pay \$6.00 within 10 days after receipt and \$5.00 per month thereafter.
Name.....
Address.....
City.....Zone.....State.....

SENSATIONAL NEW BENJAMIN SUPER CO₂ ROCKET GAS PISTOL with HI-LO (2 STAGE) JET POWER

Cal. .117 or .22

HARD HITTING—ACCURATE—ECONOMICAL—SAFE—CONVENIENT—PRACTICAL—NON TOXIC—EASY TO OPERATE—NO PUMPING—NO FLINCHING—Get 50 SHOTS from each LO STANDARD SIZE CO₂ (Soda) CARTRIDGE. Up to ¾" penetration RIFLED—Shoots Benjamin H-C Pellets & Darts. FOR TARGET AND SMALL GAME **FREE FOLDER**

BENJAMIN AIR RIFLE CO. 832 BARRY ST., ST. LOUIS 4, MO., U. S. A.

\$15.00



Build up short leg with New Plastic Wood. Makes a permanent fix that won't chip, crack or peel. And New Improved Plastic Wood has a finer grain—minimum shrinkage!



NEW "PLASTIC WOOD"

Handles like putty—hardens into wood.

BIGGEST VALUE FOR FISHERMEN!

ALUMINUM OR STEEL



WRITE! FREE 1956 CATALOG NO. PS-2

Seamaid ALUMINUM BOATS

SEAMAID MANUFACTURING CO.
Kendallville, Indiana

WHY TAKE LESS THAN THE BEST?

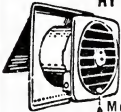
INSIST ON EAGLE FOLDING RULES

COIL SPRING JOINTS

GUARANTEED AGAINST JOINT FAILURE FOREVER

EAGLE RULE MFG. CORP. N.Y. 59, N.Y.

ATTENTION HOME OWNERS!



No excuse now for not having a kitchen fan! Complete unit. Polished grill. Automatic fan goes on when door opens!

Don't let a price fool you, this is the latest new model!

A wonderful gift for your wife.

Regular price \$27.50

Buy direct and save. Parcel post paid if check is included with order.

Medford Mfg. Co., Medford, N. J.

Wholesale! TOOLS! GUNS! CAMERAS!

BUY TOOLS, PHOTO EQUIPMENT, SPORTING GOODS, JEWELRY AND THOUSANDS OTHER NATIONALLY ADVERTISED PRODUCTS AT BIG DISCOUNTS. SAVE ON OWN PURCHASES. BIG PROFITS SELLING TO OTHERS. POSTCARD BRINGS FREE COPY "THE WHOLESALE PLAN"

AMERICAN BUYERS SERVICE

HERTEL STATION, DEPT. 8, BUFFALO 16, NEW YORK

AMAZING BARGAINS—SAVE TO 100%

75 MOUNTED WHEELS AND MINIATURE CUTTERS

Regular \$11.00 Value, Only **\$4.50** Post Paid

Electric HAND GRINDER \$9.50



10 Hi-Speed Steel & Carbon Drills From 1/4" to 5/8" on 1/4" shank. Popular Sizes up to 1/4" 30 for.....\$2.75 Post-paid

5 Woodworkers Drills \$2.95 From 1/4" to 5/8" on 1/4" shank.

5 Hi-speed steel Drills \$1.95 From 1/4" to 1/2" Diameter.

SCHUPACK SUPPLY CO. 7331 Cottage Grove, Dept. PS-65 Chicago 20, Ill. (Send Check or M.O. No C.O.D.) **NEW ILLUSTRATED CATALOG, 10c**

PALLEY MODEL BARGAINS

NEW 12" ELECT. BOAT KIT

A genuine electric motor driven speedboat with an electric spotlight, Wood Hull and Deck are already completed (excepting paint) and are ready for final assembly. Complete Kit includes: electric motor, spotlight, accessories. Works on 2 flash batteries.

3.95

NEW U-CONTROL PLANES

USE GLASS-REINFORCED FIBER. FAMOUS P-51 MUSTANG. An ideal control line flyer for indoor or outdoor models. Kit includes all parts and easy-to-follow plans.

3.95

32" - AT-6 TRAINER

For Class B engine. Kit includes die-cut fuselage and wing formers. Many pre-shaped parts. Easy to build.

5.95

Our COMPLETE LINE of MODELS includes on F-36 Sabre JET, many more Gou powered planes, electric boats, gas plane engines, accessories, and many types of model tools. Write for details.

SOUND POWER PHONES

Used by Navy for Gun Control. An ideal emergency communication system because each set is 'sound' powered—no other power needed. Will reach any point-to-point in a radius of 1/2 mile. Each set includes 2 phones on chest plate, 2 handsets, button switches and approx. 35 ft. of wire. **PER SET 9.95**

R338A MICROPHONE

Carbon type with push-to-talk button. Ideal for use where background noise is high. Can be operated with 110V drycell. Comes in 6 ft. 3 conductor shielded cable & plug.

2.49

SURPLUS ARMY PARKA

WITH REMOVABLE WOOL LINER. A cold weather friend. Outer cover is heavy duty mountain cloth—wind and weather resistant. Removable liner is simulated fur. Front has 3/4 length zipper covered by a button down storm flap. Four outside pockets have button-down storm flaps. Parka hood gives complete protection. Sizes: Small, medium and large. Large size ideal for average woman. A \$45.00 value...

14.95

NEW ZINI MECHANICS GLOVES

Actually TWO gloves in one! Outside is durable horsehide with woven wool inner liner. Liner is removable to become second pair. Outer glove is ideal for driving. Sizes: Small, medium and large. **PAIR 2.98**

NEW AIR CORPS COLD WEATHER GLOVES

Genuine Copskin with fur liner, knit cuffs and soft flannel inner liner. Made for the Navy Air Corps for use in extreme cold. Handsome Caravan Brown. Sizes: Medium and Large.

2.98

SAVE 50%

GENUINE SELECT PHILLIPINE MAHOAGANY PLYWOOD

DIRECT FROM IMPORTER

For Fine CABINET WORK, FURNITURE, Paneling DENS, OFFICES, HOTELS, etc.

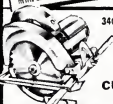
Our prices are LESS THAN DOMESTIC PLYWOOD at WHOLESALE. This selected LUAN MAHOAGANY meets the most rigid specifications. It is WEATHER and WATER RESISTANT. You'll be amazed at the beauty of this fine wood. Its rich golden elegance will thrill you. Rotary cut for beauty of grain. Both sides sanded and ready to use. Bonded with finest resin adhesive. Face side unfinished.

FREE SAMPLE ON REQUEST

3mm (1/8") x 36" x 6". \$5.00 VALUE. min. order 8 SHEETS

All orders shipped by Special Truck for lowest rates. No order accepted for less than 100 lbs. (equal to min. number of sheets shown with prices)

1/4" x 4ft. x 8ft. \$9.50 value. min. order is 10 SHEETS



3400 RPM 1/2 HP POWER SAW

COMPARES TO SAWS SELLING UP TO \$49.50 WITH A 5/8" BLADE. ONLY 19.98. RIPS - CROSSCUTS CUTS A FINISHED 2x4 LIKE A KNIFE THROUGH BUTTER

A rugged, professional type, adjustable saw. Will cut any angle from 0 to 45°. Has an adjustable 10 lb 6" rip fence. Safety trigger switch on handle. Full 1/2 HP Universal AC. 110-120 Volt. 50 cycle motor. Weighs only 8 1/2 lbs.

NEW Special 12 Pc. SPORTSMAN'S KNIFE

4 5/8" BONE HANDLE. Eliminates 12 Items from Pack or Tool Kit. **4.95**

here is the Perfect Combination Knife-Tool for every Outdoor Man. 11 Fine Quality, Steel Tools precision made to fold easily into the heavy bone covered body. In this one compact unit you have (1) regular knife (2) a fork (3) a spoon (4) a draw-knife (5) a bone saw and fish scaler (6) scissors (7) can & bottle opener (8) cork-screw (9) punch (10) screwdriver (11) metal file.

NEW 60-450X MICROSCOPE

FEATURING 60, 120, 150, 180, 300 AND 450 POWER MAGNIFICATION

NEWLY DEVELOPED—Self-Contained SUB-STAGE LIGHT ELIMINATES NEED FOR EXTERNAL LIGHT SOURCE

Take advantage of our tremendous foreign purchase. Ideal for use by Amateur Scientist, Student, in Home Laboratory for study of insects, plant life, etc.

CHECK THESE FEATURES

1. Triple, revolving turret with 10X, 20X, 30X precision ground & polished lenses.
2. Two interchangeable eyepieces, 6X and 15X with precision ground and polished lenses.
3. 5-1/2" MAGNIFICATION for all purposes—40X, 120X, 150X, 180X, 300X and 450X.
4. NEW! Sub-stage with SELF-CONTAINED LIGHT. No external light source needed.
5. Large substage mirror for use with external light sources.
6. All Metal Body—Inclines through 90 degrees.
7. Special Hardwood Case and 3 glass slides.

FREE with MICROSCOPE—8 Pc. DISSECTING SET with hardwood case.

WATERPROOF SHOEPAC

Has 10 inch, sturdy leather uppers and a genuine, all rubber shoe with a felt inner sole. Designed to be worn with or without ordinary shoes. Gives complete protection from rain, snow, mud, etc. **4.44**

SHEEPSKIN FLIGHT BOOTS

Full sheepskin lining. Leather uppers & rubber soles. Double zipper front. Laced up in back. Snug comfortable fit. Sales have heavy NON-SKID tread. In 3 sizes: Small, Medium, Large.

Order From This Ad. Pay by M.O. or check. P.O.'s accepted from U.S. firms. 1/2 deposit with C.O.D.'s. All Prices FOB Los Angeles.

FIRST QUALITY WOOD LEGS WITH BRASS TIPS

BUILD OR RESTYLE YOUR FURNITURE

Now you can build your own modern furniture or re-style old furniture to look like new. These legs are of selected, seasoned, milled, beautifully turned and smoothly sanded. They have brushed brass tips and a hidden steel mounting plate. Available unfinished or finished in Blonde, Silver Gray, Mahogany or Charcoal. Please specify when ordering. Price per set of 4 with brass tips

SIZE	FINISHED	UNFINISHED
4"	\$2.45	\$2.15
6"	3.00	2.65
8"	3.55	3.00
12"	3.95	3.55
14"	4.40	3.95
16"	4.75	4.40
18"	5.35	4.75
28"	6.25	5.35

180° OFFSET DRIVE

For use where tremendous power at low take-off RPM is desired. 6 gears rotate on self-aligning, high-speed roller bearings. 85 to 1 gear ratio. Shafts are 1/4" & 3/8" dia. USED in excellent condition. **NEW 8.95**

65 to 3 GEAR DRIVE

A precision gear box for light, accurate work. 65 to 3 ratio. gears rotate on self-aligning ball bearings. Shafts are 1/2" & a 2" coupling plate. **9.95**

ARMY MACHETTE

Has 22" Vanadium steel blade. Hardwood handle, 27" overall. Can runipped belt sheath. **1.98**

ARMY PORTABLE SHovel

Has 20" hardwood handle. Blade folds to form pick or shovel. Ideal for emergency. **1.98**

WINCH HOIST

A "swing around" type hoist. Will lift up to 1500 lbs. with 21 to 1 gear ratio. Has 12ft. of 3/16" steel cable. 40" arm with 3" pulley. **22.50**

HOBBY MOTOR

Has four take-off shafts turning at 2, 25, 150 & 4000 RPM. Operates on 110 volt, 60 cycle current. Ideal for home shop, barber, etc. **9.95**

PALLEY HYDRAULIC BUY

One of our many hydraulic Bargains. Use for opening & closing doors, etc. 1500 PSI container—2000 PSI intermittent. Will lift or push 1100 lbs. Has adjustable stroke from 25" to 4". Bore 1". Shaft 5/8". **5.75**

SAVE 50% ON NEW PALLEY HYDRAULIC CYLINDERS

Send for our New CATALOG SUPPLEMENT. Exclusively showing our complete line of HYDRAULIC SUPPLIES and EQUIPMENT. Contains many new items now being manufactured by us to meet most rigid industrial specifications. We have also added many new items to our surplus stocks.

PALLEY SUPPLY COMPANY

2263 E. VERNON AVE. DEPT PS-2 LOS ANGELES 38, CALIF.

Fuel Injection Is Coming This Year

[Continued from page 274]

present shows how much air is being delivered to the cylinders. Minimum vacuum, for instance, indicates wide-open throttle and a lot of air. The pipe transmits the information to the fuel pump, and the pump sends a proportionate amount of fuel to the cylinders.

There were other problems. Priming for cold starts was a stickler. A carburetor primes through an automatic or manual "choke." Bosch finally devised an automatic method for spraying gasoline vapor directly into the manifold.

At this point everything was working perfectly—in the laboratory. But one wintry day a Bosch man threw one of the company's research cars, equipped with an automatic transmission, in gear and promptly killed his injection engine. It primed and started all right, but it balked at the load until it warmed up.

Bosch won't reveal the answer that its engineers found to that one.

"We solved it," says Miller. "Our competitors will have to find out how."

Bosch fuel injection originated in the company laboratories in Springfield, Mass. It now has passed rigorous heat and cold tests: Research cars have been driven in zero weather. Laboratory systems have been run at 60 degrees below.

Fuel-injection systems will require more attention than a carburetor. Some of the parts are machined to tolerances of millionths of an inch. The plunger in the fuel distributing pump will cycle back and forth 10,000 times a minute at a road speed of 60 m.p.h. How will the parts wear? Bosch says that the moving parts should last for 100,000 miles.

Because the fuel flowing through the distributing pump and injection nozzles must be extra clean, the special fuel filter should be replaced at about 30,000 miles.

Engine alterations will accompany the adoption of fuel injection. Present engines are not designed for it. What changes will come about is a guess.

Cylinder heads may undergo reshaping. Intake manifolds certainly will grow bigger. Fuel injection will remove the restrictions on their size. More air will permit more fuel to be fed to engines. More fuel will produce more power.

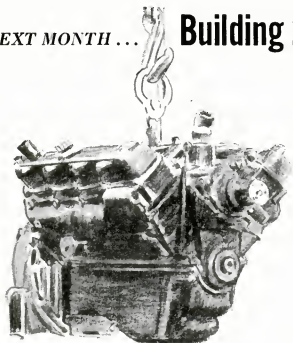
But the traffic ticket will remain constant amid the changes to come. The other day a friend of Miller's, newly introduced to fuel injection, stepped on the gas when the light turned green. In an excess of ecstasy, he was doing 50 before he knew it. Too late, he spotted the cop.

Hé paid.

END

.....
NEXT MONTH...

Building 2½ Engines a Minute



IN DETROIT's newest automobile engine plant, the workers mostly twist dials and watch blinker lights. The heavy work is done by mammoth machines that practically think. Result: a new V-8 every 24 seconds. A single station tests 72 finished engines at a time: connects fuel, oil and water lines . . . starts the engines . . . runs them 20 minutes . . . shuts them off . . . reports how they did.

This latest miracle of automation will be described in five pages of eye-witness sketches by artist-reporter J. George Janes in the March issue of POPULAR SCIENCE MONTHLY.

PORTABLE LIGHT PLANTS

GIANT 2000-2500 WATT PLANT

110/120 v. 60 cye. AC. absolutely the best made—exclusive dynamic—balanced armature—heavy windings develop up to 5000 watt overload for motor starting. Skid mounted—portable. Powered by an easy starting Briggs or Wisconsin 6 HP engine—complete with all accessories: engine easily disconnected for other uses. Big outlets—box, voltmeter, no wiring necessary. Ample current for all purposes. Factory price—(Item 51) Wt. 110 lbs. Reg. price \$585. Special at... **\$299.50**
Same plant with electric self-starter... **\$359.50**
Generator only and control box... **\$169.50**
DUAL VOLTAGE 110/220 available on any of above models for \$28.00 additional.

HI-LINE 6000 WATT PLANT

PUSH BUTTON START
115/250 v. 60 cye. AC. A brute of a power plant with rugged 14.6 hp Wisconsin engine. Features of electric for ranges, water heaters, freezers, pumps, machinery, etc. Ample both 110 and 220 volts. Ideal where heavy current is needed. Wt. 300 lbs. Reg. price \$695. Wt. worth \$695. With crank start. Factory price... **\$585.50**
Same plant built with self-starter... **\$645.00**
Generator and control box only. Beautifully matched chrome engine of tractor. Wt. 240 lbs. (Item 163) Factory price... **\$345.00**

We make every type and size of light plants—Write, giving us your requirements!

52 pc. SOCKET SET



High quality, guaranteed non-breakable sockets made by Husky. Beautifully matched chrome this set will allow absolutely the best—contains a complete set of 28 sockets in 1/2" drive, 3/8" drive and 1/4" drive, plus all necessary wrenches, handles, screwdrivers, reversible slots, handies, ratchets, etc. All ancient, guaranteed breakers. A beautiful set of tools that will handle any job in a big double steel box. Wt. 17 lbs. (Item 265) List price \$62.95. Factory Special... **\$27.95**

MASTER AIR COMPRESSOR

COMPARE! This is the only compressor built with a NO RUST stainless steel tank. Safe up to 500 lbs. (Item 209) High pressure type (c.f.m.). Large volume of air for heavy duty service. For paint spraying, blasting rock & auto tires, greasing, and lining, etc. Piston type 2" bore compressor with built-in oil filter. Master built with high strength alloys and precision bearings. Tank 12" dia. 21" long. 50 lbs. cap. Equipped with automatic switch that starts and stops motor to maintain desired pressure up to 150 lbs. and check valve, safety valve, gauge, shut-off valve, 20 ft. air hose and tire chuck. Beautifully balanced on ball bearing wheels and rubber tires. Don't waste chances with used or surplus units. Our compressors are factory new and are guaranteed **SAFE**. Low factory prices—(Item 82) Wt. 85 lbs. Reg. \$175. (Item 209)... **\$99.50**
4 HP Model, Larger heavy duty, 12" dia. tank, with Repulsion Induction motor and unloader switch that starts motor free from band. Cap. 150 lbs. (Item 209a)... **\$129.50**
Factory price...

SAVE middleman profits BUY DIRECT from MASTER MECHANIC factory

1300-1500 WATT PLANT

115 v. 60 cye. Push button start. Powered by a 3 1/2 HP. Clinton engine. Complete with all accessories: emergency power for operating any oil burner, television, lights, etc. Includes all accessories, etc. which require up to 1500 watts. Reg. \$475 value. Factory price... **\$239.50**
1500 WATT PLANT Powered by 4 1/2 HP. Wisconsin engine. Electric starting & battery charging built-in Factor... **\$279.50**
MASTER-LITE 2500 Watt Plant
110/120 v. 60 cye. AC. A power plant, recently constructed and yet designed for easy portability. Can be started by rope or built-in 12 v. electric push button start. Built-in winding to charge battery. (Item 21) Factory Price... **\$329.50**
1550 WATT PLANT Powered by 4 1/2 HP Briggs engine, complete with all accessories. Includes control box, and handy plug-in power receptacle. An ideal plant for permanent or stand-by service... **\$329.50**
115 v. 60 cye. AC. Similar to above, but larger and 33% more capacity. Wt. 270 lbs. (Item 162) Factory Price... **\$379.50**
DUAL VOLTAGE 110/220 for any of above plants \$30.00 additional.

MASTER MECHANIC'S PORTABLE PLANTS



NEW LOW PRICE \$89.50
runs handaws electric drills
600-700 WATTS
PUSH BUTTON START
115 v. 60 cye. AC. Powered by a rugged 2 HP. easy starting Briggs engine. No wiring necessary. Just plug in and operate. Plenty of emergency power for any oil burner, freezer, brooder, etc. which require emergency lighting. (Item 164) Reg. \$145.00. Factory Price... **\$143.50**
up to 700 watts. Ideal for radios. Complete with Voltmeter and built-in winding to charge 6 v. battery. In car trunk. Be prepared if storm knocks out power lines. Reg. \$100.00. (Item 165) 1000-1200 Watt Plant (Item 45) same as item 164 but with 3 1/2" greater output... **\$199.50**

LITTLE GIANT PLANT (Item 24)

Imagine—65 pounds of portable power that goes with you anywhere! Instantly provides plenty of power to operate all types of electric drills, hand saws, standard light bulbs, up to 6 1/2 HP transfer pumps, radio, electric shavers, etc. Ideal for equipment contractors & other service trucks, for hunters, campers, farmers and fishermen. 500 watts, 115 v. DC. Ruggedly constructed with 100% Wisconsin Briggs engine. (Item 273) Wt. 65 lbs. Regular list price \$224.75. Now, for limited time only at our rock bottom factory price... **\$89.50**

NEW! 1000-1200 WATT LIGHT PLANT

115/120 v. 60 cye. AC. Powers by a world famous 2 1/2 HP Briggs and Stratton engine, equipped with convenient rewind starter. An excellent plant for portable or standby emergency power. Produces plenty of current for operating any power tools, oil burner, freezer, radio, lights, etc. which require up to 1200 watts. Engine is easily disconnected for other uses. Complete with control box, voltmeter and two plug-in receptacles. (Item 10) Wt. 170 lbs. Special... **\$179.50**

EXTENSION CORD

Heavy duty and very flexible. Neoprene 12-gauge, 20 year quality. Wt. 12 lbs. (Item 252) \$29.95. Complete with rubber plug and outlet. A few minutes' effort buy at only **\$6.95**
12-2 POWER CABLE. Heavy duty, very flexible, rubber covered, 50 ft. with male and female fittings. Wt. 9 lbs. (Item 502a) **\$10.45**
50 ft. with 24 in. fittings. Suitable to handle muddy or sandy water. Simple to operate—simply plug start engine and watch the water go. Powered by a rugged, low-cost service 2 HP Briggs engine. Pre-lubricated sealed bearings for years of trouble-free service. Wt. 11 1/2" Wt. 60 lbs. (Item 502) **\$134.50**
Factory price... **\$134.50**
2" Model (150 gal. capacity) 90 lbs. Fact. Spec. \$154.50

HI-FLO Centrifugal PUMP

Completely self-priming! No foot valve required. Tremendous capacity—100 gals. per min. v. s. Special Impeller handles mud, sludge or sandy water. Simple to operate—simply plug start engine and watch the water go. Powered by a rugged, low-cost service 2 HP Briggs engine. Pre-lubricated sealed bearings for years of trouble-free service. Wt. 11 1/2" Wt. 60 lbs. (Item 502) **\$134.50**
Factory price... **\$134.50**

LESS THAN WHOLESALE

MASTER

DC

ARC

WELDERS

Now! a portable type used for industrial electric performance, yet at a price hundreds of dollars less than expected. Senior model made for years of trouble-free, continuous service. High capacity DC welding, enables you to weld with confidence—easily welds anything up to 2" plate using from 160 to 200 lbs. rods. Built-in stabilizer and cooling system makes arc easy to strike and hold. Total control rheostat provides low heat soldering, brazing and welding from 30 to 300 amps. Complete with instructions, guarantee and triple V-belt or flat pulley. Easy to hook up and easy to operate.

WELDER ONLY—DUAL CONTROL MODEL. Same as above, but drive with your tractor, jeep or gas engine of 14 HP or more. (Item 11) **\$119.50**
WELDER ONLY—STANDARD MODEL. Same as above but with single rheostat for heat control. (Item 38) **\$99.75**
COMPLETE POWER MASTER. Illustrated above powered by a 14.6 hp, air cooled Wisconsin engine. Wt. 480 lbs. (Item 280) Compares with welder costing \$1200. **\$449.50**
Factory Special... **\$349.50**
WELDING KIT. Two 10 ft. leads, welding helmet, electrode holder, ground clamp. Sold only with welder. **\$10.50**

HEATING & VENTILATING FAN

(Item 10) Easily installed in furnace or boiler room. Forces even heat to all rooms. Eliminates smoke. Removes kitchen odors. Eliminates heat and odors. Powerful continuous duty motor. (10-1) 20 v. AC. Mount in wall or ceiling to ventilate any area. Quiet, super efficient fans. (400 to 600 c.f.m.)
8" Pipe, Wt. 5 lbs. **\$9.95**
10" Pipe, Wt. 8 lbs. **\$14.95**
12" Pipe, Wt. 10 lbs. **\$19.95**
HEAVY DUTY FAN. Semi-permanent duty, suitable for spray booths, restaurant exhausts, poultry houses, etc. 10" dia. Wt. 8 lbs. (Item 108) **\$11.95**
12" Fan, Wt. 10 lbs. (Item 109) **\$15.95**

JET STEAM MASTER



(Item 463)

Now, a super efficient portable steam generator that produces live steam at 100 lbs. pressure in 60 seconds from a cold start. Produces large volume of high pressure steam on 2 pints of fuel oil. Instantly cleans stoves, grates, dirt, rust, old paint, etc. off implements and road machinery. Powers for farm use. Sterilizes soil. Sterilizes as it cleans—milk equipment, etc. Fully automatic. New, built-in lifetime bronze water circulating pump. Draws water from faucet or bucket. Simple and safe—anyone can operate. Built-in safety valve. Complete with 12 ft. of hi-pressure hoses and new triple V-belt and steam run that automatically mixes in nonp solution of desired. Wt. 25 lbs. (Item 463) Special factory price... **\$329.50**

9 TON HYDRAULIC PRESS

A tremendously powerful hydraulic press, capable of exerting 18,000 lbs. pressure. Press for straightening bent connecting rods, king pins, crankshafts, and more. Also used for bending and hars—on or pushing out frozen bearings and bushings. Developed pressure under precise control and valid. Built-in gauge on accurate gauge. Complete with both large and small dies and jigs to straighten any kind of curved metal. (Item 464) Wt. 110 lbs. (Item 464) Special factory price... **\$69.50**

Send check or M.O. Prices f.o.b. Factory. 10 day money back guarantee. SEND 10c for... **BIG 1956 Catalog**
MASTER MECHANIC MFG. CO. DEPT. F-7M Burlington, Wis.

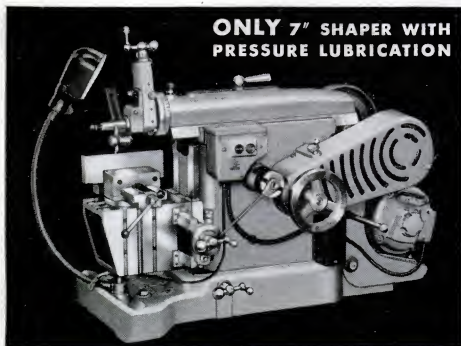
MORE ACCURACY • VERSATILITY • DEPENDABILITY FOR YOUR MONEY

SOUTH BEND gives you quality that counts—quality that pays off in better and faster metal working by means of more accuracy, versatility and dependability.

Compare the South Bend 7" Shaper and Pedestal Grinder with any others on this basis. You'll find that their quality actually gives you more value on a dollar-for-dollar basis. The best way to prove this is in your own plant. Let our distributor show you how both of these efficient machine tools can best be used in your production, toolroom or maintenance work. Time payment terms available.



8" Pedestal Grinder—\$257



**ONLY 7" SHAPER WITH
PRESSURE LUBRICATION**

7" Precision Bench Shaper—\$551

(Prices f.o.b. factory, less motors)



PLEASE SEND INFORMATION CHECKED:



☐ 9" and 10" BENCH LATHES



☐ 10" to 16-24" FLOOR LATHES



☐ DRILL PRESSES



☐ 1/2" & 1" COLLET TURRET LATHES



☐ TOOL GRINDERS



☐ 7" BENCH SHAPERS



☐ MILLING MACHINES

Name _____

Street _____

City _____

State _____

Building Better Tools Since 1906 • SOUTH BEND LATHE • South Bend 22, Indiana

新加坡海峽殖民地政府

This One



EJF8-S5S-9PL3

Let us send you—without charge—these two 33⅓ rpm

The most sublime ever composed

Superbly performed in full symphonic high fidelity—plus a majestic

BEETHOVE

SUPREME ACHIEVEMENT – THE IM

9th SYMPHONY

**complete on two
long-playing 33 $\frac{1}{3}$ rpm
high-fidelity records**

yours

FREN

WITH THIS MONTH'S RECORD—ON 7 DAYS FREE

An Exciting Way to Own the Best-Loved Symphonies, Concertos, Operas, Musical Comedies—AT AN UNUSUALLY LOW COST!

MAIL the coupon now and you will receive **FREE** — Beethoven's 9th Symphony complete on two pure vinyl, long-playing high-fidelity records.

This is our Free Gift to introduce you to a new planned program called MUSIC TREASURES OF THE WORLD. Under this program you can now enjoy in your own home a complete library of the world's great music . . . beautifully recorded on the latest high-fidelity electronic equipment, with the full range of sound the human ear is capable of hearing (80-15,000 cycles per second)! Because assured distribution to members eliminates the usual expense of unsold records - and because of the development of mass production high-fidelity record pressing equipment - we can offer our members 12" long-playing high-fidelity records, most containing at least two complete works - for only \$2.98!

WHAT DOES THIS MUSIC PROGRAM INCLUDE?

All over the world—in Paris, Vienna, New York, Berlin, Milan—the engineers are recording and mastering the best-loved works of all the greatest composers, both serious and light. And these selections are all thrilling brand-new performances played by world-famous symphony orchestras under such eminent conductors as Walter Hendl, Herman Abendroth, Hans Swarowsky, Max Schoenherr, Kurt Graunke, Rich-

ard Kempe, Felix Prohaska, William Str
George Sebastian.

FREE — MUSIC APPRECIATION COURSE

By accepting this offer now you will also be in our home study Music Appreciation Course FREE. With each Music Treasures selection you will receive, free, a new issue of our Prepared by Joseph Machlis, Assoc. Prof. of Queens College of N.Y.C. — this course enables you to understand the fine points of music and it as do the critics and composers themselves.

HOW THIS UNIQUE MUSIC PROGRAM WORKS

Your acceptance of the Beethoven 9th Symphony does not obligate you to buy additional Music Tapes. However, we will extend to you, as a courtesy, an Associate Membership... for the next 12 months. You will be offered a new 12" long record at the special member's price of \$14.95 (plus a few cents for U.S. tax and shipping). If you do not wish to purchase any particular record, please merely return the form provided for that purpose.

This great work is too long to be recorded on one 12" Hi-Fi record, (more than an exciting pleasure). It has therefore been transcribed on TWO 10" records. The curation which will accompany the gift records, future records, will be recorded on 12" disc sold exclusively to members for only \$2.98 plus U.S. tax and shipping. This current is on approval; because we want to demonstrate great value only members of Music Treasure Mail the coupon NOW.

MUSIC TREASURES OF THE WORLD • 100 Sixth Ave., New York 13, N.

IT'S A PSYCHOLOGICAL FACT: **PLEASURE HELPS YOUR DISPOSITION**



R. J. Reynolds Tob. Co.,
Winston-Salem, N. C.

How's your disposition today?

EVER FEEL LIKE SQUAWKING? It's only human to be irked by little annoyances. But — it's a psychological fact that pleasure helps your disposition! If you smoke, don't forget: there's *more pure pleasure in Camels!*

For more
pure pleasure... have a
Camel

"I've tried 'em all—once a Camel smoker, always a Camel smoker!"

Tyrone Power



TODAY MORE PEOPLE SMOKE CAMELS and get more pure pleasure from Camels than from any other cigarette! Fact is, no other cigarette is so *rich-tasting*, yet so *mild* as Camel! If you want the most possible pleasure, remember this: pleasure helps your disposition. For *more pure pleasure* — have a Camel!

No other cigarette is so rich-tasting, yet so mild!